FREE STANDING RANGE

BASIC: NE597R0ABSR
MODEL: NE59J7650WS
MODEL CODE: NE59J7651WS/AC

SERVICE Manual

ELECTRIC RANGE

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1. Precaution

1-1 Forward

This SAMSUNG Service Manual, “ 30” Freestanding Self-Cleaning Electric Range,” provides the technician with information on the operation and service of the Freestanding Self-Cleaning Electric Range. It is to be used as a training Service Manual. For specific information on the model being serviced, refer to the “Owner’s Manual” or “Tech Sheet” provided with the electric range.

1-2 Safety Precautions

- Repairs of the appliance should be carried out by a licensed technician only. Incorrect repairs may result in dangerous situations. If you need repairs, contact a SAMSUNG Service Center or your dealer.
- If the power cord is defective, it must be replaced by a qualified service agent with a UL listed range cord.
- Electrical leads and cables should not be allowed to touch the oven.
- Rating plate is located on the left side of warming drawer.
- The power supply of the appliance should be turned off when it is being repaired.

WARNING

- To avoid risk of severe personal injury or death, disconnect power before working/servicing on appliance to avoid electrical shock.
- When the oven operates, the interior parts will be very hot.

SAMSUNG Electronices assumes no responsibility for any repairs made on our products by anyone other than Authorized Service Technicians.

1-3 Important Safety Instructions

Read and follow all instructions before using your oven to prevent the risk of fire, electric shock, injury to person, or damage when using the range. This guide doesn't cover all possible conditions that may occur. For further assistance contact your service agent or manufacturer.

WARNING

This symbol will help alert you to hazards or unsafe practices which could cause serious bodily harm or death.

- Be sure your appliance is properly installed and grounded by a qualified technician.
- Do not repair or replace any part of the appliance unless specifically recommended in the manual. All other servicing should be referred to a qualified technician.
- Always disconnect power to appliance before servicing by removing the fuse or switching off the circuit breaker

WARNING

- INJURIES CAN OCCUR IF THE RANGE TIPS
- INSTALL ANTI-TIP DEVICE PACKED WITH RANGE

- FOLLOW ALL INSTALLATION INSTRUCTIONS

To reduce the risk of tipping of the range, the range must be secured by properly installed anti-tip devices. To check if the bracket is installed properly,

- Warming drawer : grasp the top rear edge of the Range and carefully attempt to tilt it forward. verify that the anti-tip devices are engaged.
- Storage drawer : Remove drawer and verify leveling leg is inserted into and fully secured by the anti-tip devices.

Refer to the installation manual for proper anti-tip bracket installation.

- Do not step, lean or sit on the doors of the range -this can cause the range to tip, resulting in burns or serious injuries.

WARNING

- **DO NOT TOUCH HEATING ELEMENTS OR INTERIOR SURFACES OF OVEN** – Heating elements may be hot even though they are dark in color. Interior surfaces of an oven become hot enough to cause burns. During and after use, do not touch, or let clothing or other flammable materials contact heating elements or interior surfaces of oven until they have had sufficient time to cool. Other surfaces of the appliance may become hot enough to cause burns – among these surfaces are oven vent openings and surfaces near these openings, oven doors, and windows of oven doors.

CAUTION

Do not store items of interest to children in cabinets above a range or on the back guard of a range – children climbing on the range to reach items could be seriously injured.

- Do Not Leave Children Alone - Children should not be left alone or unattended in area where appliance is in use. They should never be allowed to sit or stand on any part of the appliance.
- Never Use Your Appliance for Warming or Heating the Room.
- Storage in or on Appliance – Flammable materials should not be stored in an oven or near surface units. Be sure all packing materials are removed from the appliance before operating it. Keep plastics, clothes and paper away from parts of the appliance that may become hot
- Wear Proper Apparel – Loose-fitting or hanging garments should never be worn while using the appliance.
- Do Not Use Water on Grease Fires – Turn off oven to avoid spreading the flame. Smother the fire or flame by closing the door or use dry chemical, baking soda or foam- type extinguisher.
- Use Only Dry Potholders – Moist or damp potholders on hot surfaces may result in burns from steam. Do not let potholder touch hot heating elements. Do not use a towel or other bulky cloth.

WARNING

SURFACES

- **DO NOT TOUCH SURFACE UNITS OR AREAS NEAR UNITS** – Surface units may be hot even though they are dark in color. Areas near surface units may become hot enough to cause burns. During and after use, do not touch, or let clothing or other flammable materials contact surface units or areas near units until they have had sufficient time to cool. Among these areas are the cook-top and surfaces close to the cook-top.

WARNING

To avoid risk of electrical shock, personal injury, or death, make sure your range has been properly grounded and always disconnect it from main power supply before any servicing.

1. Precaution

SURFACE COOKING UNITS

- **Use Proper Pan Size –** This appliance is equipped with one or more surface units of different sizes. Select utensils having flat bottoms large enough to cover the surface unit heating element. The use of undersized utensils will expose a portion of the heating element to direct contact and may result in ignition of clothing. Proper relationship of utensil to burner will also improve efficiency.
- **Never Leave Surface Units Unattended at High Heat Settings** – Boil overs may cause smoking and greasy spillovers may ignite.
- **Make Sure Reflector Pans or Drip Bowls Are in Place** – Absence of these pans or bowls during cooking may subject wiring or components underneath to damage.
- **Protective Liners** – Do not use aluminum foil to line surface unit drip bowls or oven bottoms, except as suggested in the manual. Improper installation of these liners may result in a risk of electric shock, or fire.
- **Glazed Cooking Utensils** – Only certain types of glass, glass/ceramic, ceramic, earthenware, or other glazed utensils are suitable for range-top service without breaking due to the sudden change in temperature.
- **Utensil Handles Should Be Turned Inward and Not Extend Over Adjacent Surface Units** – To reduce the risk of burns, ignition of flammable materials, and spillage due to unintentional contact with the utensil, the handle of a utensil should be positioned so that it is turned inward, and does not extend over adjacent surface units.
- **Do Not Soak Removable Heating Elements** – Heating elements should never be immersed in water.
- Be sure you know which control pads operate each surface unit. Make sure you turned on the correct surface unit.

SELF-CLEAN OVENS

- **Do Not Clean Door Gasket** – The door gasket is essential for a good seal. Care should be taken not to rub, damage, or move the gasket.
- **Do Not Use Oven Cleaners** – No commercial oven cleaner or oven liner protective coating of any kind should be used in or around any part of the oven.
- **Clean in the self-clean cycle only parts listed in this manual**. Before self-cleaning the oven, remove the broiler pan and any utensils from the oven.
- **Never keep pet birds in the kitchen** – the health of birds is extremely sensitive to the fumes released during an oven selfclean cycle. Fumes may be harmful or fatal to birds. Move birds to well-ventilated room.
- **Important Instruction** – In the event the self-clean mode “F” code goes on, or three long beeps sound, oven is malfunctioning in the self-clean mode. Turn off or disconnect appliance from power supply and have serviced by a qualified technician.

VENTILATING HOODS:

- **Clean Ventilating Hoods Frequently** – Grease should not be allowed to accumulate on hood or filter.
- **When flaming foods under the hood, turn the fan on.**

OVEN

- **Use Care When Opening Door** – Let hot air or steam escape before you remove or replace food in the oven
- **Do Not Heat Unopened Food Containers** – Build-up of pressure may cause container to burst and result in injury.
- **Keep Oven Vent Ducts Unobstructed** – the oven vent is located above the left rear surface unit. This area could become hot during oven use. Never block this vent and never place plastic or heat sensitive items on vent
- **Placement of Oven Racks** – Always place oven racks in desired location while oven is cool. If rack must be moved while oven is hot, do not let potholder contact hot heating element in oven.
- **Do Not** allow aluminum foil or meat probe to contact heating elements.

GLASS/CERAMIC COOKING SURFACES

- **Do Not Cook on Broken Cook-Top** – If cook-top should break, cleaning solutions and spillovers may penetrate the broken cooktop and create a risk of electric shock. Contact a qualified technician immediately.
- **Clean Cook-Top With Caution** – If a wet sponge or cloth is used to wipe spills on a hot cooking area, be careful to avoid steam burn. Some cleaners can produce noxious fumes if applied to a hot surface.

DEEP FAT FRYERS:

- Use extreme caution when moving the grease kettle or disposing of hot grease.

1-4 Model & Serial Number Label and Tech Sheet Locations

This Model / Serial Number label and Tech Sheet locations are shown below.
The rating plate is located above the drawer on the oven frame.

2. Specifications

2-1 Features

Features

Item	Steam Clean
How to Use	- Pour the water 10oz (+detergent) - Push the steam cleaning button - In around 20 minutes, the oven will stop automatically. - Wipe it out with a damp cloth.
Operating (Temperature)	About 158˚F
Operating Time	20 Minutes
Used Heater	Bottom Baked Heater
Smell	No smell
Tool to clean	Wet cloths

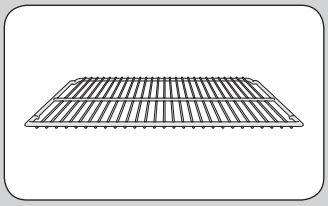
Biggest Capacity

- The biggest capacity in current US market !!!
- It benefits consumers to cook for large family food in Thanksgiving & Christmas seasons
  (i.e Turkey 25 lbs = 4.4 cu ft, 20 lbs = 3.5 cu ft)

2-2 Table of Specifications

Items		Model	
		BASIC MODEL	NEW MODEL
Model Name		NE597R0ABSR	NE59J7651WS
Category		Convection	Convection
Overall	Width	30″	30″
	Installation type	Freestanding	Freestanding
	Color availability	STS	STS
Control	Oven	Membrane	Membrane
	Cooktop	Knob	Knob
	Display	LED	LED
	Electronic clock	Yes	Yes
	Control lock capability	Yes	Yes
	Audible preheat signal	Yes	Yes
Cooktop	Material	Ceramic glass	Ceramic glass
	# of element	5	5
Power	LR	6" - 1,200W	7" - 1,800W
	RR	6" - 1,200W	6" - 1,200W
	CR	Warming Center(100W)	Warming Center(100W)
	LF	9” - Dual(6”/9”) (1,400/3,000W)	7” - Bridge (7”/Bridge-1,800/2,600W)
	RF	12” - Triple(6”/9”/12”) (1,100/2,200/3,000W)	12” - Triple(6”/9”/12”) (1,100/2,200/3,000W)
Oven	Capacity(cu.ft)	5.9	5.9
	Broil element	3,800 watts	4,200 watts
	Bake element	2,400 watts	3,000 watts
	Convection System	Yes	Yes
	Convection Element	Yes(800W / 240V)	Yes(800W / 240V)
	# of Racks	3	2
	Interior oven light	120V, 40 watts	120V, 40 watts
	Cleaning	Pyrolytic & Steam	Pyrolytic & Steam
Drawer	Type	Warming drawer	Warming drawer
	Element	600 watts	600 watts
	Warming rack	No	No
Dimensions (inch)	Oven Interior(W x H x D)	25 x 21 1/8 x 19	25 x 21 1/8 x 19
	Exterior - Width	31 (Cook top) : 787mm	29 4/5 (Cook top) : 759mm
		29 4/5 (Body) : 757mm	29 4/5 (Body) : 759mm
	Exterior - Height	36 (cook top) : 913mm	47 (cook top) : 1196.3mm
	Exterior - Depth	26 3/10 (Door) : 667.7mm	23 1/2 (Door), : 599.6mm
		28 3/5 (with handle) : 727.7mm	26 (with handle) : 659.6mm
	Net weight: Lbs (Kg)	181 lbs (82kg)	170 lbs (77kg)
Power	Rating(240V 60Hz)	Range : 5,200W Cooktop : 8,500W	Range : 5,400W Cooktop : 8,600W

2-3 Accessory

Item	Description	Code No.	Q'ty
	Rack Flat	DG75-01001C	2

3-1 Removing Cover-Back Main Wire, Cover-Back Guard Wire and PCB-Main

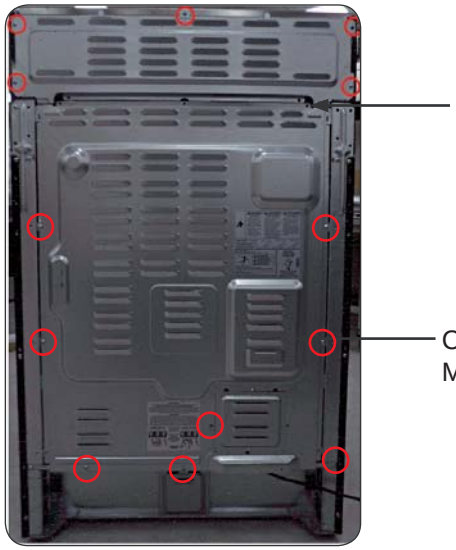
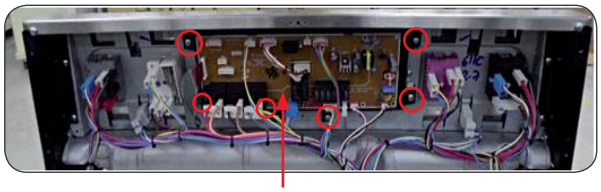
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Cover-Back Main Wire, Cover-Back Guard Wire and PCB-Main		1. Turn off the electrical supply going to the range. 2. Pull the range away from the wall so that you can access the rear panel. 3. Remove the 8 screws from the Cover-Back Main Wire and remove the panel. 4. Remove 5 screws from the Cover-Back Guard Wire and remove the cover.
		5. Remove 6 screws of PCB Main and separate PCB Main.
		REASSEMBLY NOTE: When removing the membrane tail from the main PCB, unlock the tab completely.

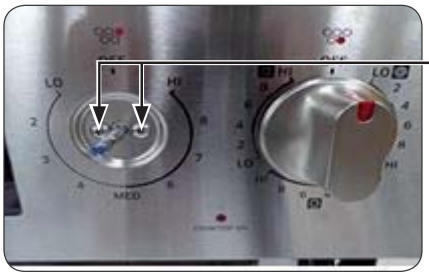
3-2 Removing Regulator-Energy

WARNING

Disconnect power before servicing the range Replace all panels before operating range. Failure to do so can result in dearh or electrical shock.

PRECAUTION

When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Regulator-Energy		**1.** Turn off the electrical supply going to the range. **2.** Pull the range away from the wall so that you can access the rear panel. **3.** Remove Cover-Back Guard Wire. (See step 4 on page 10)
		4. Remove Regulator-Energy connectors.
		5. Pull out the Knob-Dial.
	 2 Screws	**6.** Remove 2 screws and replace Regulator-Energy.

* Reassembly of All part is the reverse order of disassembly.

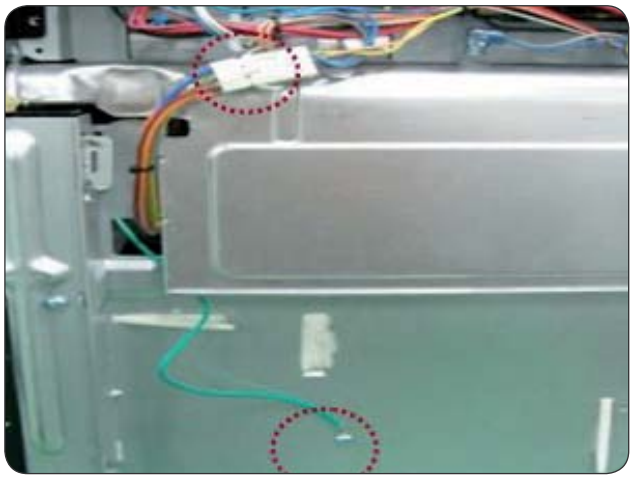
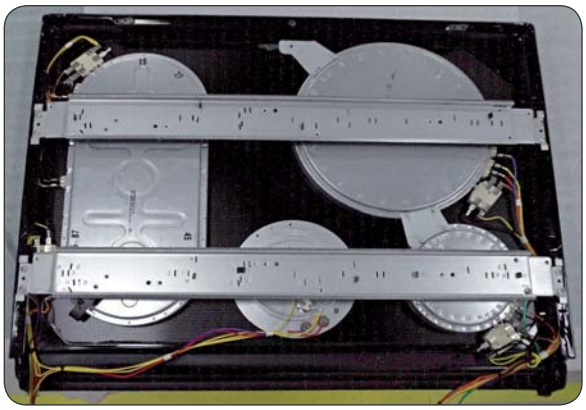
Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

3-3 Removing Surface elements and The Ceramic Glass Cooktop

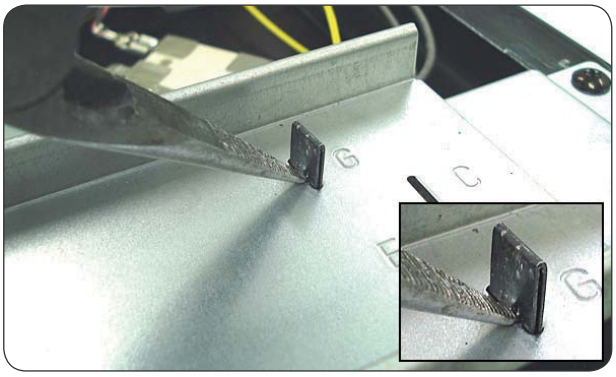
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock..

Parts	Explanation Photo	Explanation
Surface elements and Ceramic Glass Cooktop		**1.** Unplug the cord or disconnect power **2.** Open oven door and remove the 3 screws located at the front of the cook-top, then close the door.
		**3** Slightly lift up and pull up the cook-top and then unplug the 2 connectors wire at the back by squeezing side tabs and unscrew ground wire.
		**4.** Protect the cooktop surface and turn the assembly over.

3-3 Removing Surface elements and The Ceramic Glass Cooktop

Parts	Explanation Photo	Explanation
Surface elements and Ceramic Glass Cooktop		**5.** To remove the surface elements **a)** Remove the wires from the element and limiter terminals. **b)** Remove the element bracket screw (shown above) for the element you are servicing. **c)** Carefully lift the bottom of the bracket just far enough to remove the element. **d)** Use sharp tool to remove the heating element. **REASSEMBLY NOTE**: When you reinstall the element make sure that the wires are inserted onto the correct terminal then reinstall the bracket screw to secure it to the cooktop.

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

3-4 Removing The Latch-Door & Switch-Door Plunger

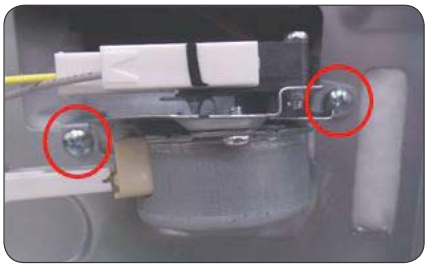
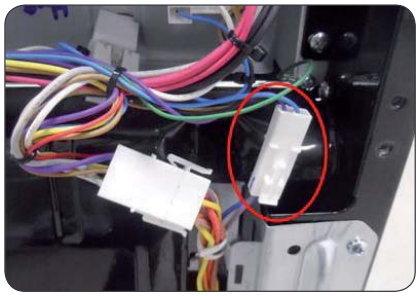
WARNING

ELECTRICAL SHOCK HAZARD

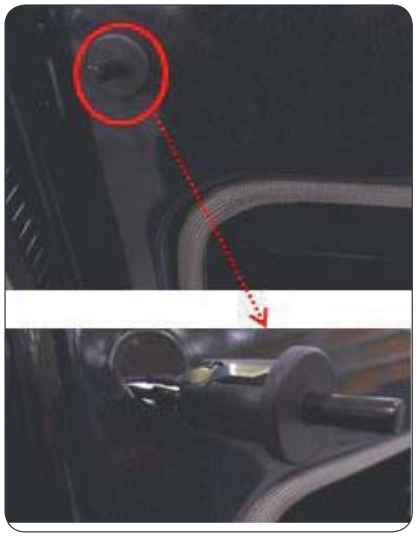
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

CAUTION

When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Latch-Door & Switch-Door Plunger		**1.** Turn off the electrical supply going to the range. **2.** Open the oven door. **3.** Raise the cooktop (see page 12 for the procedure). **4.** To remove the Latch-Door: **a)** Remove the 2 screws from the front of cavity.
		**b)** Remove two screw from Cover-Back Main and remove latch-door
		**5.** To remove the Switch-Door Plunger **a)** Remove the Cover-Back Guard Wire (see page 10 for the procedure). **b)** Release the wire from Cable Clamp.

3-4 Removing The Latch-Door & Switch-Door Plunger(Continued)

Parts	Explanation Photo	Explanation
Latch-Door & Switch-Door Plunger		**c)** Remove the Switch-Door Plunger from the range. take out carefully by shaking up and down by using tool.

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

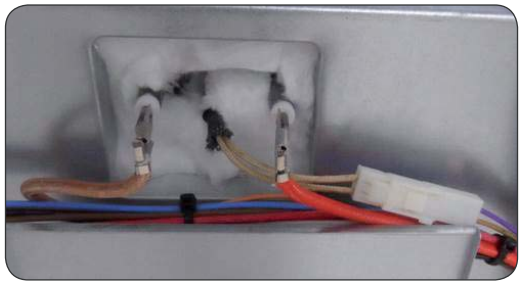
3-5 Removing Heater-Broil

WARNING

Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

CAUTION

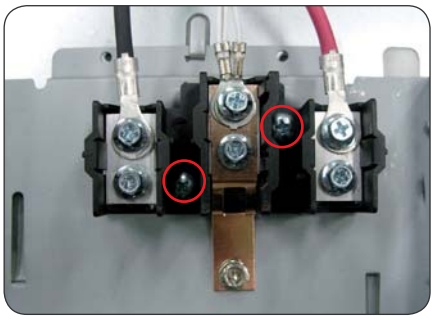
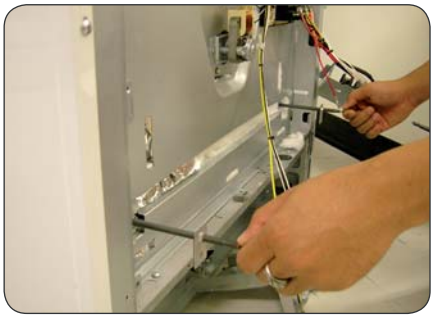
When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Broil Heater		**1.** Turn off the electrical supply going to the range. **2.** Open the oven door and remove the racks from inside the oven. **3.** To remove the broil element. a) Remove the Sensor-Thermistor and 4 screws from the front and rear brackets. b) Remove Cover-Back Main Wire and disconnect 2 wires from Heater-Broil and a wire from Sensor-Thermistor.

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

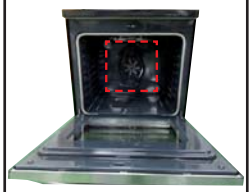
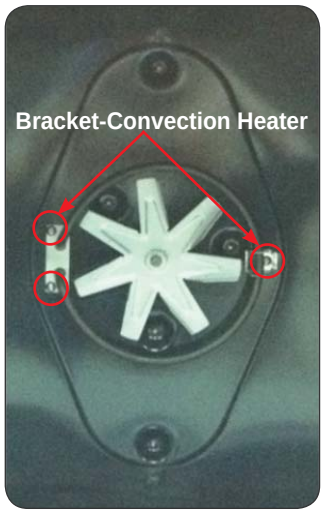
3-6 Removing Heater-Bake

Parts	Explanation Photo	Explanation
Heater-Bake		**1.** Unplug range or disconnect power. **2.** Pull the range out of its mounting location so that you can access the rear of the unit. **3.** Remove Cover-Back Main Wire. (See step 3 on page 10 for procedure) **4.** Remove Terminal-Block and Bracket-Cover Access(with Adiabatic-Terminal) by unscrew 2 points.
		5. Unscrew 2 points of Heater-Bake.
		6. Cut the Adiabatic-Rear based on the lower side.
		**7.** Carefully pull out Heater-Bake and replace it.

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

3-7 Removing Convection Element, Fan-Covnection and Motor-Convection

Parts	Explanation Photo	Explanation
 Convection Element, Fan-Convection , Motor-Convection		**1.** Disconnect power and remove oven racks. **2.** Pull the range out of its mounting location so that you can access the rear of the unit. **3.** Remove Cover-Back Main Wire from the unit. (See step 3 on page 10 for procedure) **4.** Remove oven door. (See Page 23 on page for procedure) **5.** Remove Cover-casing **6.** Unscrew 2 screws and remove Bracket-Convection Heater to remove Heater-Convection. **7.** Unscrew nut of Fan-Convection Main. **8.** Unscrew 3 points and disconnect a Motor-Convection wire and disconnect Heater-Convection wire.

CAUTION

Be careful not to bend the Fan-Convection(Blade)

3-8 Removing Lamp

WARNING

Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

CAUTION

When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo

Explanation

1. Disconnect power.
2. Remove oven door.
3. Turn the glass bulb cover in the oven counterclockwise to remove.
4. Turn bulb counterclockwise to remove from socket.
5. Replace bulb and cover by turning clockwise.

Lamp

CAUTION

Be careful not to scratch or chip the oven liner paint when to remove the oven light socket in the next step.

Explanation Photo	Explanation

To replace socket assembly:

6. Disconnect the wires from the socket terminals.
7. Use a screwdriver and bend the clips on the socket away from the edges of the liner hole(there are 6 clips on the socket), and pull the socket out of the liner. Push the socket out from the rear of the unit.

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

3-9 Removing Sensor-Thermistor

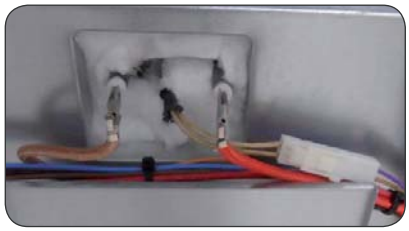
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Sensor-Thermistor		**1.** Turn off the electrical supply going to the range. **2.** Remove oven door and racks from inside the oven. **3.** Unscrew Sensor-Thermistor. **4.** Remove Cover-Back Main Wire and disconnect a wire from Sensor-Thermistor. **5.** Replace the Sensor-Thermistor.

3-10 Removing Assy-Drawer & Heater-Warming Drawer (Continued)

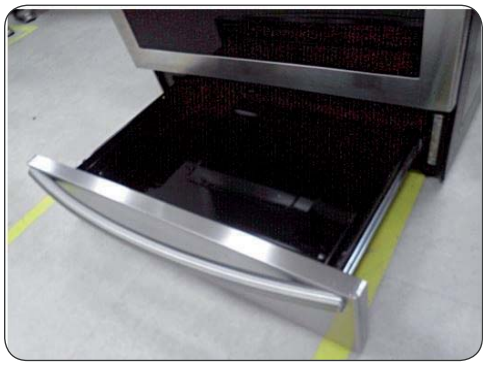
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

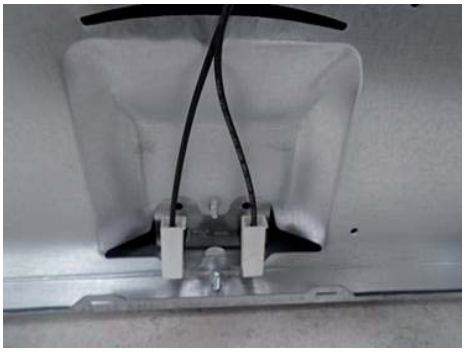
Parts	Explanation Photo
Assy-Drawer & Heater-Warming Drawer	

Explanation

To remove Assy-Drawer:

1. CAUTION -Turn power OFF before removing the Warming Drawer.
2. Open the drawer to the fully opened position.
3. Locate glide lever on each side of drawer, push down on the left glide lever and pull up on the right glide lever.
4. Pull out the warming drawer.

3-10 Removing Assy-Drawer & Heater-Warming Drawer

<table>
<tr><th>Parts</th><th>Explanation Photo</th><th>Explanation</th></tr>
<tr><td rowspan="2">Assy-Drawer & Heater-Warming Drawer</td><td> </td><td>To remove Heater-Warming Drawer:
1. Remove the screw from Bracket-Warming Heater.</td></tr>
<tr><td>
  </td><td>2. Remove the screw from Cover-Warming Heater and disconnect 2 wires.
3. Pull out the Heater-Warming Drawer.</td></tr>
</table>

* Reassembly of All part is the reverse order of disassembly.

3-11 Removing and Replacing Oven Door

WARNING

The door is very heavy. Be careful when removing door Do not lift door up by the Handle-Door.

<table>
<tr><th>Parts</th><th>Explanation Photo</th><th>Explanation</th></tr>
<tr><td rowspan="4">
Oven door</td><td> </td><td>To remove Oven Door:
1. Fully open the door
2. Pull the hinge locks downward(Fig.1)</td></tr>
<tr><td> </td><td>3. Firmly grasp both side of the door at the top.
4. Close door to the door removal position, which is approximately 5 degrees. (refer to the Fig.2) Lift door up and out until the hinge arm are clear of the slot.</td></tr>
<tr><td>
 </td><td>To replace door:
1. Firmly grasp both sides of the door at the top position.</td></tr>
<tr><td> </td><td>2. Fully open the door.
(If the door will not fully open, it means that the indentation is not seated correctly in the bottom edge of the slot. Push the hinge locks up to the locked position.)
3. Close the oven door.</td></tr>
</table>

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

3-12 Removing Handle-Door and Glass-Inner (Continued)

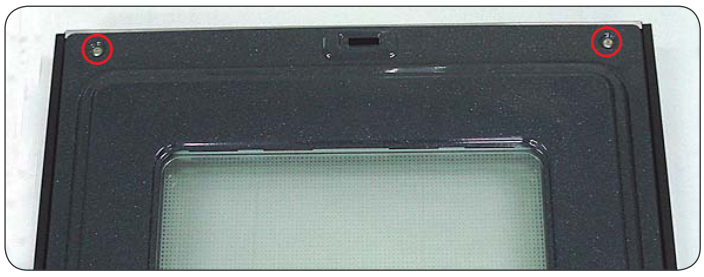
WARNING

ELECTRICAL SHOCK HAZARD

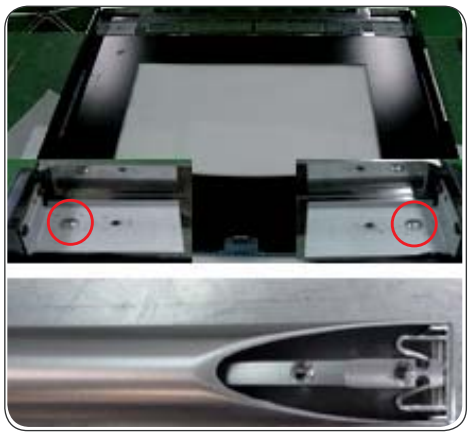
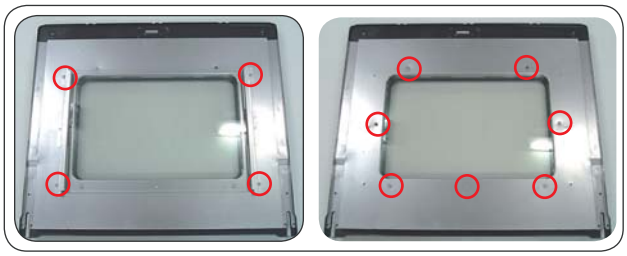
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

PRECAUTION

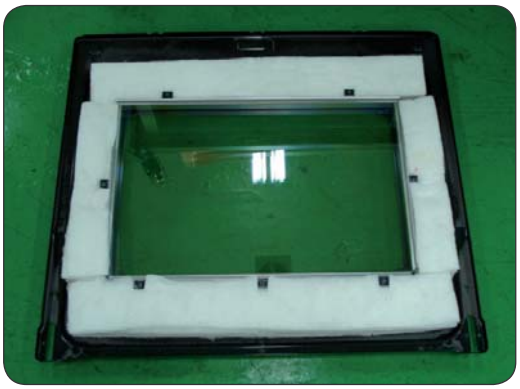
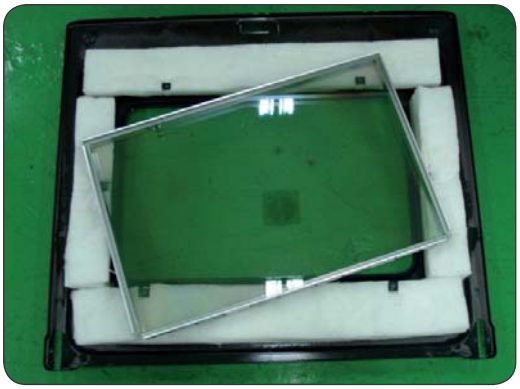
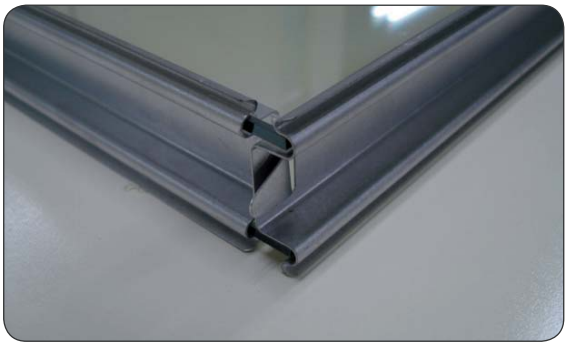
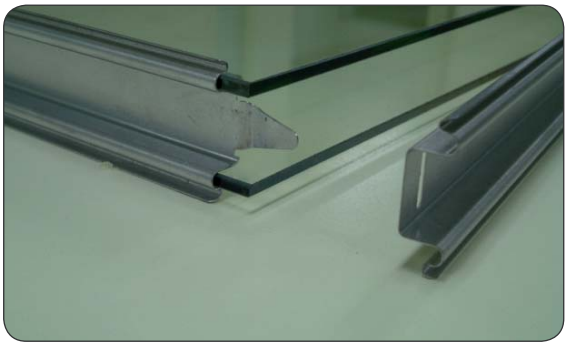
When you work on the electric range, be careful when handling the sheet metal parts. Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Door		**1.** Remove the oven door from the range (see page 23 for the procedure.) **2.** Place the oven door on a padded work surface with the front glass facing down. **3.** Remove 3 bottom screws from the door.
		**4.** Remove 2 Handle-screws from the door.
		5. Lift the door rear assembly off the front assembly.
		6. Remove 2 spacers and 2 screws.

3-13 Removing Handle-Door and Glass-Inner (Continued)

Parts	Explanation Photo	Explanation
Handle Door		**To remove Handle-Door** **1.** Remove 2 screws to remove Handle-Door
Glass-Inner	 	**To remove Glass-Inner** **1.** Remove 6screws from rear side of door to remove 2 Hinge-Door.
		**2.** Remove 4screws to remove Glass-Inner Sub Assembly. **3.** Remove 7screws to remove Baffle-Door.

Removing Handle-Door and Glass-Inner

Parts	Explanation Photo
Handle Door	 
	Explanation
	4. Remove Baffle-Door and take out the Glass-Inner assembly.
	Explanation Photo
	 
	Explanation
	5. Unfold 2 flanges of Cover-Frame Inner Glass to taking out Glass-Inner

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

3-13 Removing Gasket-Door

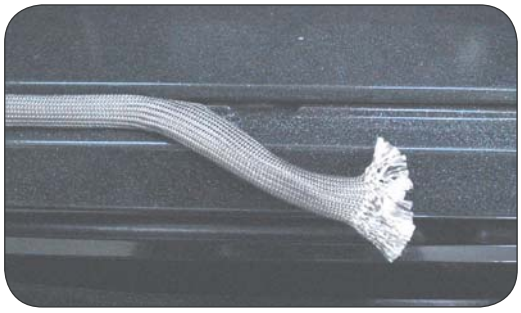
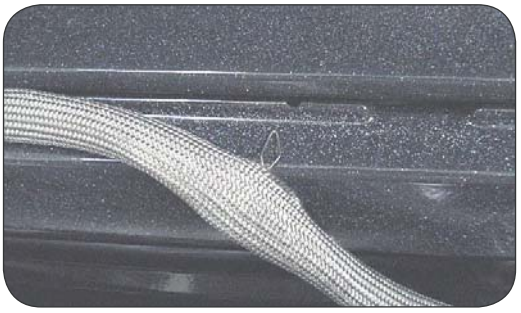
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the range. Replace all panels before operating range.
Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric range, be careful when handling the sheet metal parts.
Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo
Gasket door	 
	Explanation
	1. Open the oven door to its fully down position. **2.** Pull the ends of the gasket out of the liner holes. **3.** Pull the oven door gasket clips out of the holes until all of the clips are removed.
	REASSEMBLY NOTE: When you install the new gasket, make sure that all of the clips are seated in their liner holes, and that the ends of the gasket are pushed fully into their holes. Use the pointed end of a pencil to push the gasket ends into the holes.

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

3-14 Removing The Panel-Side

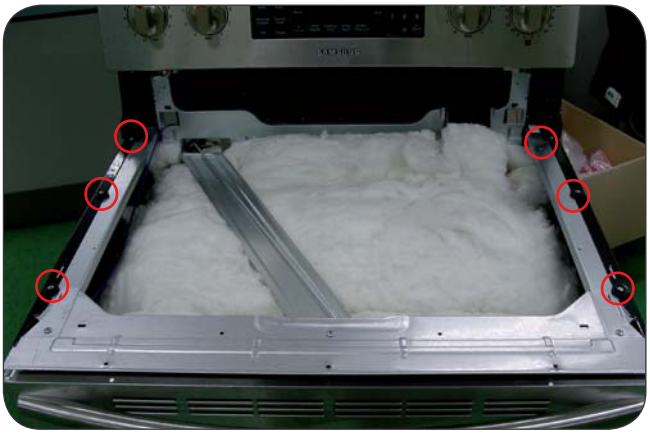
WARNING

ELECTRICAL SHOCK HAZARD

Disconnect power before servicing the range. Replace all panels before operating range.
Failure to do so can result in death or electrical shock.

PRECAUTION

When you work on the electric range, be careful when handling the sheet metal parts.
Sharp edges may be present, and you can cut yourself if you are not careful.

Parts	Explanation Photo	Explanation
Panel Side		**1.** Turn off the electrical supply. **2.** Remove the oven door from the range (see page 23 for the procedure). **3.** Pull the range away from the wall so you can access the back of the unit. **4.** Remove the 6 screws from the rear of Panel-Side and remove Cooktop (see step 3~4 on page 3-3). **5.** Remove the 3screws from the top of each Panel-Side. **6.** Pull the back of the side panel out from the range approximately 10˚ **7.** Push forward and remove Panel-Side.

* Reassembly of All part is the reverse order of disassembly.

Screw
- Terminal Block Screw : M4 X 18.
- The others : M4 X 12.

4-1 Information Display Codes

Possible check codes during use can be checked before service.

1. Press **'Clock'** pad.

2. Press a number **'1,2,3,4'** pad.

3. Press the **'START/SET'** pad.

4. Press **'Clock'** and number **'1'** pads at the same time for 3 seconds. Check codes are displayed.

5. Press number **'0'** pad, the latest 4 check codes can be checked. But, if the oven turns off, the stored check codes are deleted.

6. Press **'OFF/CLEAR'** pad to return to normal display mode.

Check code

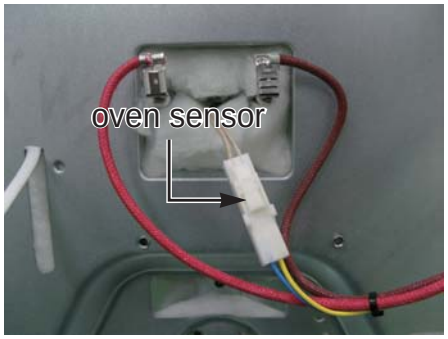
Displayed code	CAUSE	SOLUTION
C-20	oven sensor opened (over 2950Ω)	**1.** Disconnect power. Open the back cover. Disconnect sensor harness from control Measure sensor resistance :1080Ω at the room temperature → If there are any problems, replace oven sensor. **2.** If there is not any problem with oven sensor, Please check whether there is a damaged terminal or wire on harness. **3.** Check resistance of oven sensor connector on main PCB (Normal:2850Ω)
	Oven sensor shorted. (Under 930Ω)	

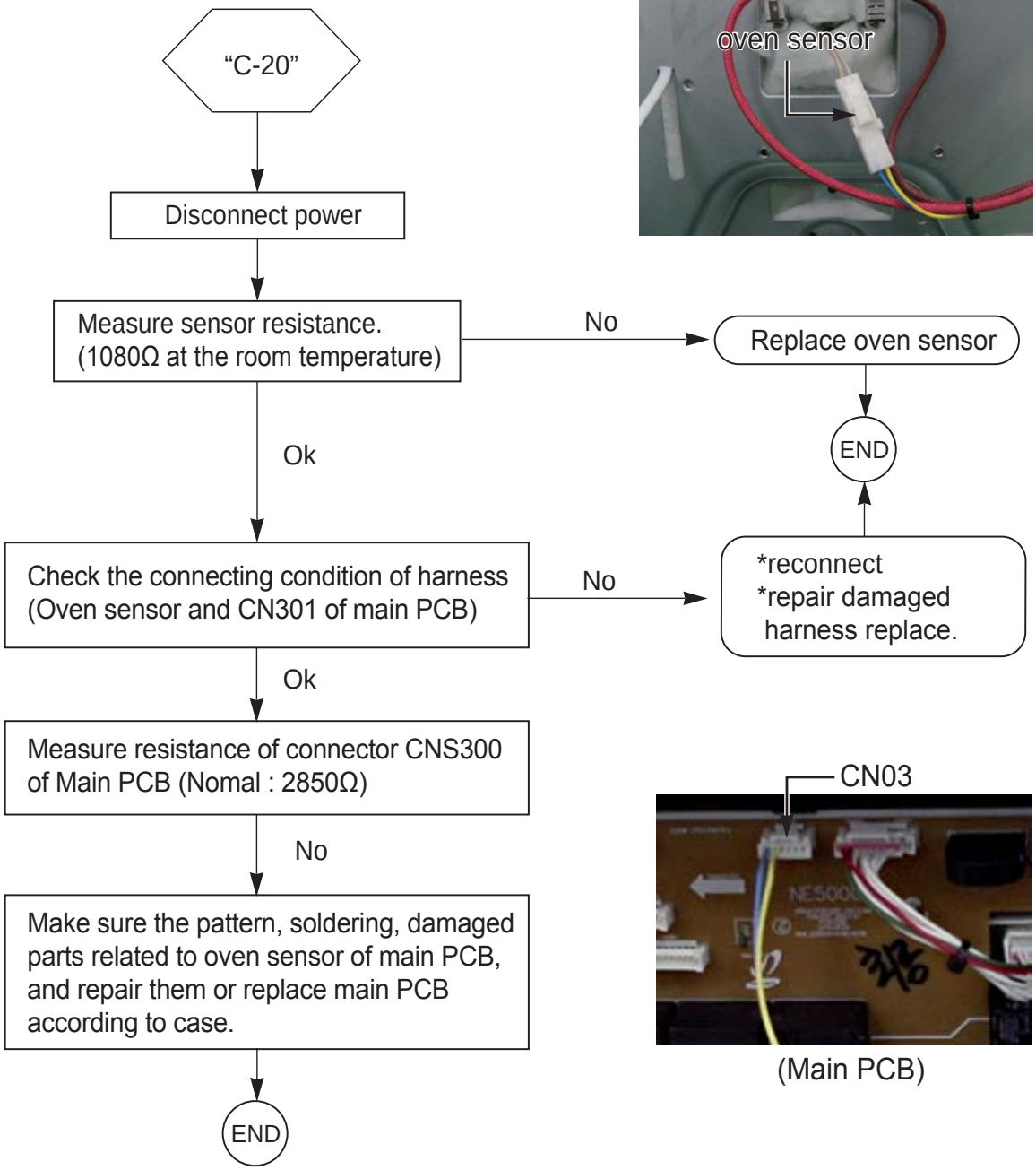
4-1 Information Display Codes

Check code

Displayed code	CAUSE	SOLUTION
C-21	Oven heating over	1. Disconnect power. Open the back cover. Disconnect sensor harness from control. Measure sensor resistance :1080Ω at the room temperature → If there are any problems, replace oven sensor. 2. Check the broil, bake and convection heater. Check the resistance of the each heater. 3. Check whether DLB of sub PCB, Broil, Bake and Convection heater relay are working normally. 4. Check the wiring connections on the main PCB. 5. Check the resistance of oven sensor connector on main PCB. (Normal : 2850Ω)
C-d0	Shorted key	1. Check whether the keypad cable has been inserted into connector of main PCB. 2. Check whether between main PCB and connector or keypad and cable have a short circuit. 3. If there is no problem with the main PCB connector or keypad cable, replace.
C-d1	Door locking	1. Disconnect power. Open the back cover. Check whether harness has been connected with door lock switch and motor. 2. Confirm whether resistance value of door lock motor is to normal or not. 3. Activate the door lock, measure a voltage at the wire connection on the door lock motor. (Normal Voltage : AC 120V) 4. Check whether door locking switch is being worked normally.

4-1 Information Display Codes

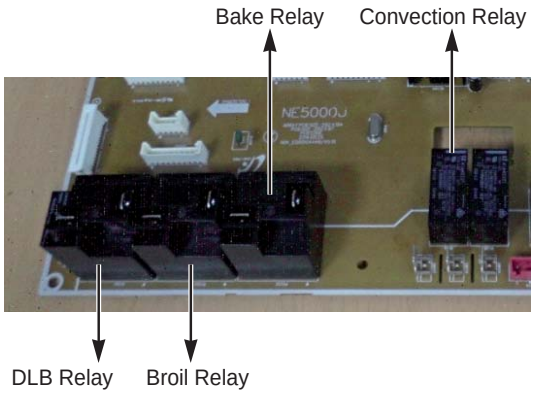




(Main PCB)

4-1 Information Display Codes

Check code



"C-21"

Disconnect power and main PCB

* Check the DLB, Bake and Broil relay. (Nomal:∞Ω)
* Check whether there is any damaged parts of PCB pattern.

No

Main PCB

* Replace main PCB
* Solder again if pattern is damaged or parts is wrong contacted.

END

Ok

* Measure oven sensor resistance. (1080Ω at the room temperature)
* Check the connecting condition of harness related with oven sensor.

No

*Reconnect after replacing the oven sensor.

END

Ok

* Check connector and harness connected to PCB.
* Check whether harness on connector (CNS302,CNS303) of Main PCB is connected normally into the connector(CNS302,CNS303) or not.

No

Replace or repair the harness.

Ok

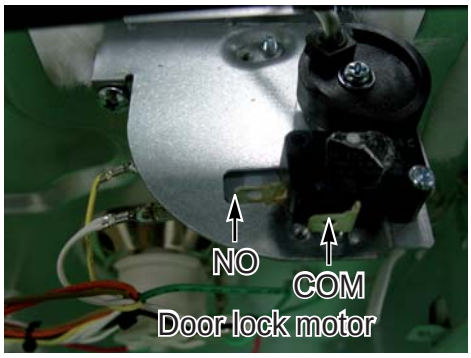
With replacing main PCB, and make set work.

No

Replace main PCB

END

4-1 Information Display Codes



"C-d1"

*Disconnect power.
*Get rid of harness connected with Lock motor

* Micom switch check (com-NO)
* Measure resistance of Lock motor Coil.(1750~1850Ω at the room temperature)

No

* Replace micro switch or Lock motor.

END

Ok

*Check whether
*Check whether voltage(AC 120V) is offered to lock motor with letting lock work or not.

No

Ok

*Check whether harness connected normally into CNS300 of main PCB.

No

* Repair damaged harness or replace

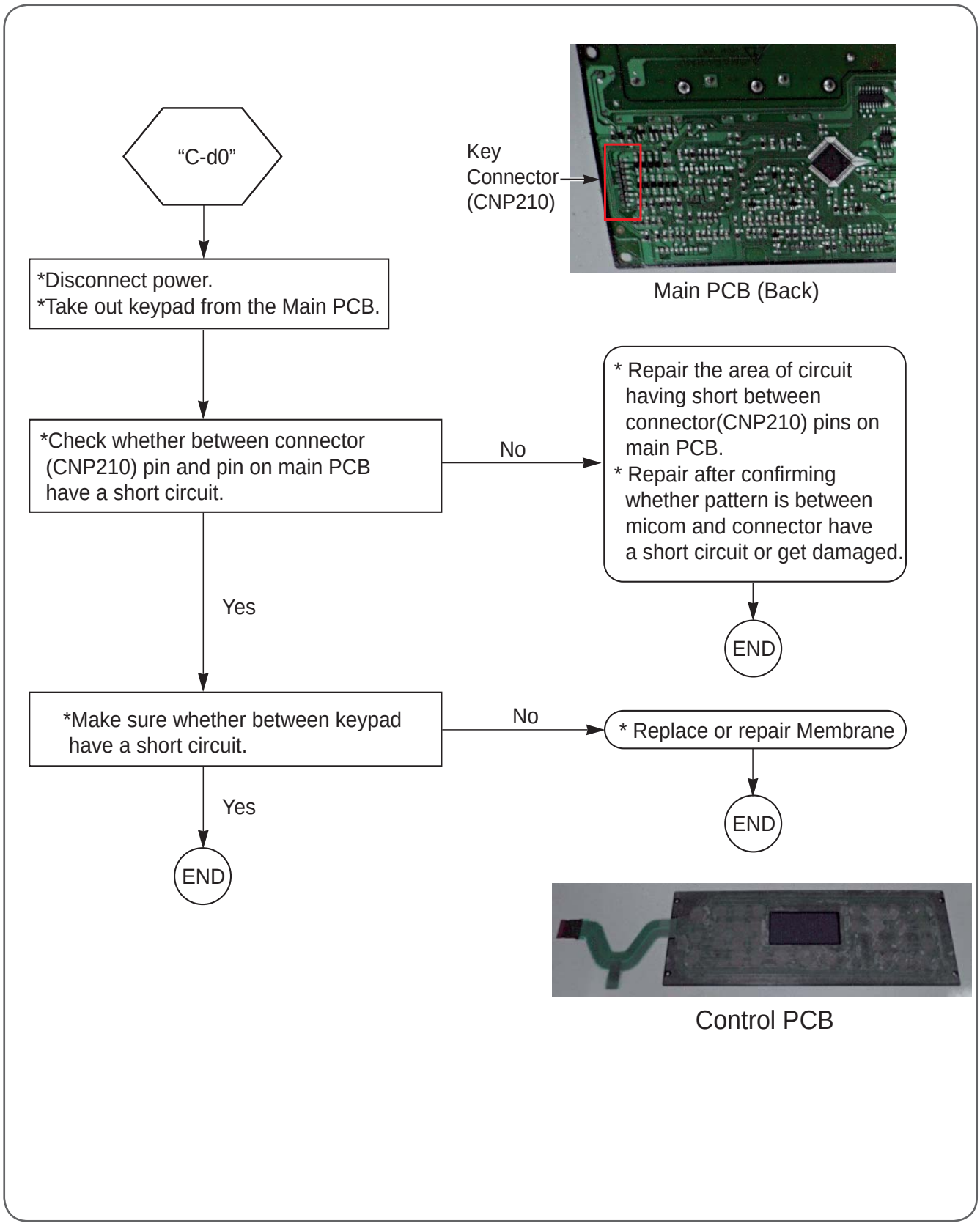
*Measure resistance CNS300 of Main pcb.
(COM-NO: ∞ at the room temperature)
*COM : orange color
*NO : brown color

No

* Replace main PCB.
* Solder again if pattern is damaged or parts is wrong contacted.

END

4-1 Information Display Codes

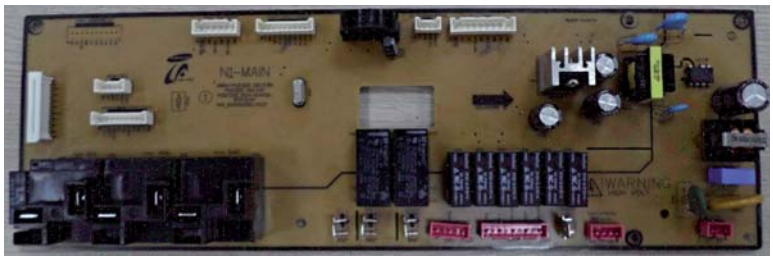

"C-d0"
*Disconnect power.
*Take out keypad from the Main PCB.
*Check whether between connector (CNP210) pin and pin on main PCB have a short circuit.
No
* Repair the area of circuit having short between connector(CNP210) pins on main PCB.
* Repair after confirming whether pattern is between micom and connector have a short circuit or get damaged.
END
Yes
*Make sure whether between keypad have a short circuit.
No
* Replace or repair Membrane
END
Yes
END
Key Connector (CNP210)
Main PCB (Back)
Control PCB

4-1 Information Display Codes

Control PCB Operation

Sort of Control PCB

Main PCB



(Front)

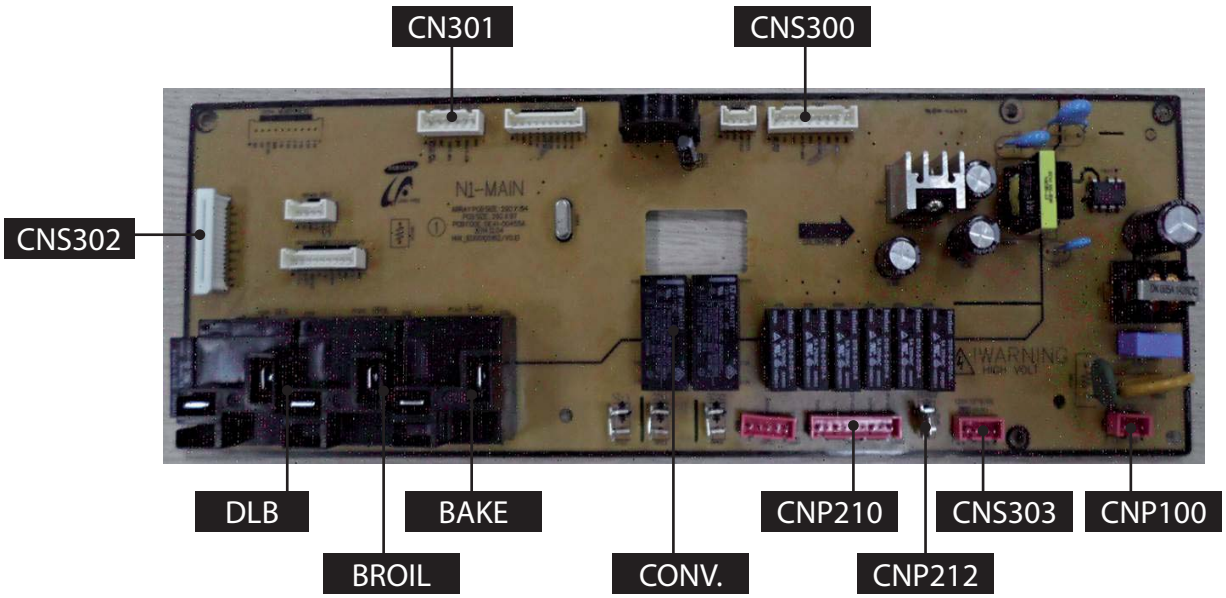
(Back)

Membrane

LED

4-1 Information Display Codes

* Explain of primary parts of Main PCB



Explatin of the function of primary parts.

CNP100	This is to supply power with SMPS, and AC120 with MAIN PCB through harness.
CNS300	This is connector which is connected with Door plunger switch and Door lock switch. (COM-NO,COM-NC)
CNS301	This is connector which is connected with oven sensor.
CNS303	This is to stop operating self-cleaning and steam mode if hot indicator lamp on cooktop is lighted with being supplied with AC120V(L1, N).
CNS302	This is consisted of 20 pin and take a role of getting a cable on keypad to connect with membrane.
CNP210	This is connector which have door lock motor, oven lamp and relay of convection fan connected.
RY200	Circuit is designed to all relay worked after Ry-source ralay is being worked. (For safety)
RY201	Circuit is designed to have broil relay or worked after DLB relay is being worked by Double line break.
RY202 RY203 RY204	Broil relay(RY202), Bake relay(RY203), convection relay(RY204) will be on-off working by micom signal after DLB relay is worked.
CNP209	This is terminal to connect harness with relay to get heater on warming drawer work.
CNP212	This is terminal which is connected with cooktop warming center.

SYMPTOM	DIAGNOSIS	REMEDY
oven not operating (No power, No display)	* Measure an input voltage. (240/120V or 208/120V) * Measure an input voltage of terminal block.	* Check circuit breaker. * Make sure that the state of wire is connected with Terminal block.
	* Make sure that the relay on Main PCB is being worked normally. * Make sure whether harness between connector (CNS302,CNS303) on main PCB has been loosen or disconnected.	* Replace Main PCB if relay has been damaged or there is any cracking on the Main PCB. * Repair harness is connected main PCB. * After confirming whether harness has been inserted into relay on Main PCB or not, take action follow as; - Replace or repair harness. - Replace or repair main PCB.
	* Measure resistance both ends of terminal on thermostat. (normal : 0 ohms) * Check whether harness is connected terminal on thermostat has been loosen or disconnected. * Measure voltage regulator (IC02,IC03) on main PCB. - IC02 : 7812(DC 12V) - IC03 : 7805(DC 5V)	* Replace the thermostat. * Replace or repair harness. * Replace or repair after confirming the state of working of main PCB.
Oven temperature is risen slowly.	* Make sure whether harness is connected with Broil, Bake and convection heater has been loosen or disconnected.	* Repair and replace harness.
	* Make sure whether Broil, Bake, and convection heater has been disconnected.	* After taking out terminal from each heater, measure resistance of heater and then replace that if it is not a normal resistance value.
	* Make sure that heater relay and pattern on Main PCB.	* Replace or repair relay. * Replace or repair Main PCB.

4. Troubleshooting

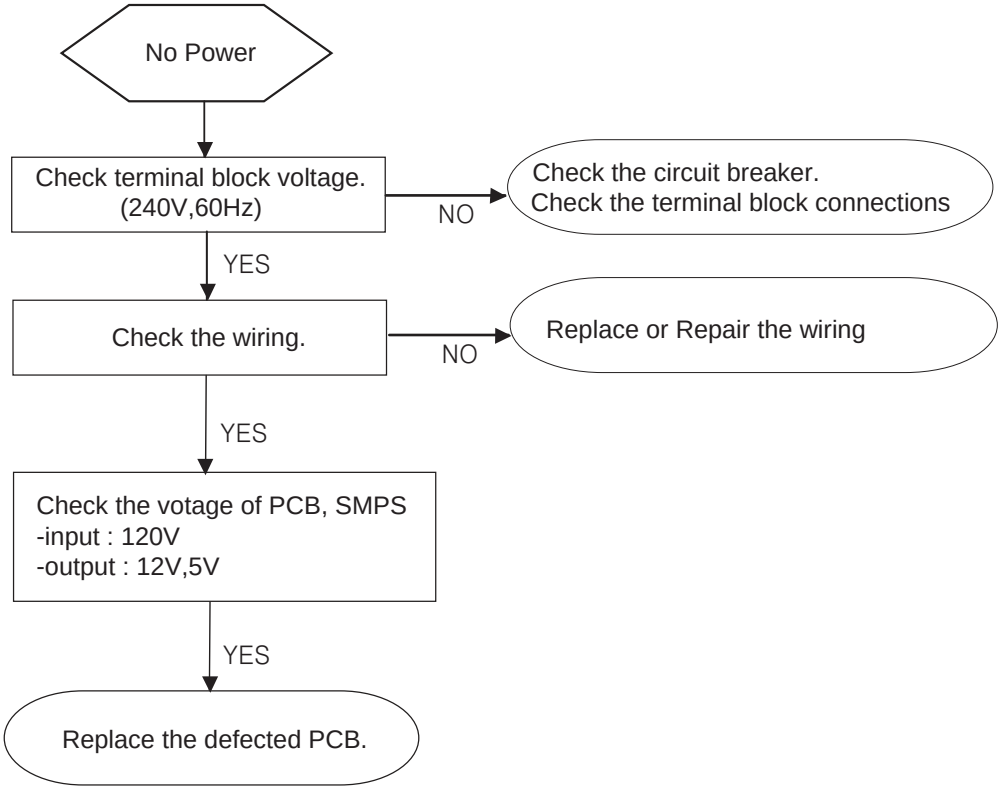
SYMPTOM	DIAGNOSIS	REMEDY
Oven temperature is risen fast.	* Check whtether temperature is risen over 400˚F(202˚C) within 10 minutes in a state of room temperature.	* Replace or repair it if relay on Main PCB or main have a short circuit.
	* Check whether harness has been misconnected or have a short circuit.	* Replace or repair harness.
	* Measure resistance values of each heater are within a normal extent or not.	* Replace heater is in a abnormal state.
The self-cleaning feature will not operate when warming center or warming drawer is on.	* This is in normal state.	* The self-cleaning feature will not operate when warming center or warming drawer is on.
Keypad is not worked normally in partially or entirely.	* Make sure that keypad cable on main PCB is in normal state.	* Replace after confirming whether it has been loosen or disconnected.
	* Make sure connector (CNP210) on main PCB or PCB pattern.	* Replace or repair after confirming whether keypad cable has been loosen or disconnted.
Warmer drawer heating is not working.	* Check warmer drawer relay (RY205) on Main PCB and terminal(CNP209).	* Replace terminal(CNP209) or relay (RY205). * Replace Main PCB.
	* Measure whether resistance value of warmer drawer heater is in normal extent or not.	* Replace warmer drawer heater.
Oven lamp is not working.	* Check the oven lamp relay (RY208) on Main PCB and connector (CNP210).	* Replace or repair if harness has been loosen or disconnected. * Replace oven lamp relay(RY208) or Ry-source relay.(RY200) * Replace main PCB.
	* Measure the resistance value of both ends of lamp terminal.	* Replace lamp if it has been disconnected.(120V / 40W)

4. Troubleshooting

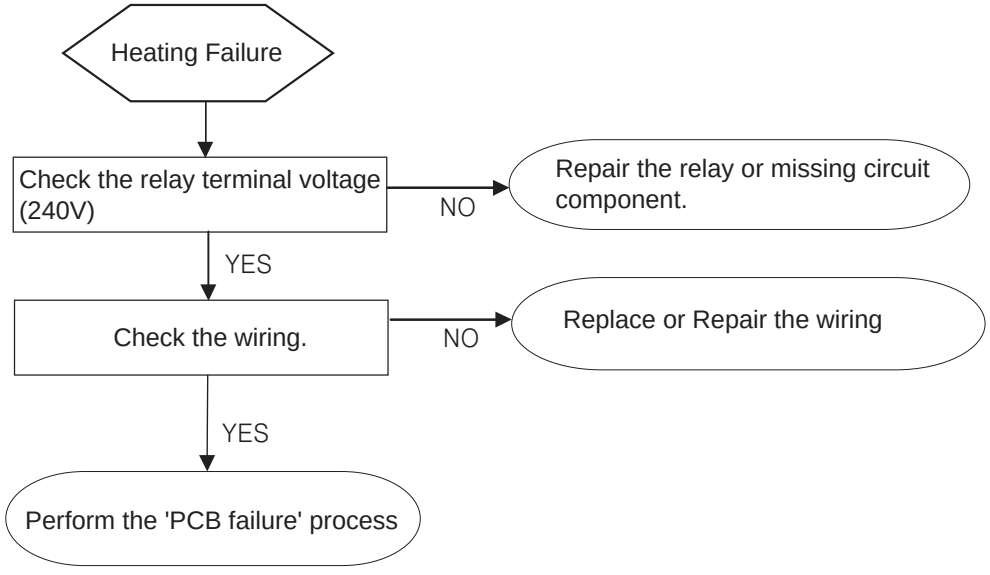
SYMPTOM	DIAGNOSIS	REMEDY
Cooktop is not working or working abnormally.	* Make sure that Radiant element or Infinite switch corresponded RR(Right Rear), RF(Right Front), LR(Left Rear), LF(Left Front).	* Replace Infinite switch or Radiant element.
	* Check whether harness is connected with radiant element or Infinite switch has been loosen or disconnected.	* Replace or repair harness
	* Check whether there is any crack or the area of being disconnected of harness.	
	* Measure whether RC(Rear Center) Heater has been connected with warming center relay(RY206) on Main PCB normally or not.	* Replace or repair Warming Center. relay(RY206) * Replace or repair Warming Ry-source relay. * Replace Main PCB. * Replace or repair if harness has been loosen or disconnected.
Convection fan is not rotated.	* Check whether Convection fan relay (RY207) on Main PCB and connector(CNP210) is in normal.	* Replace or repair Relay. * Replace or repair connector.
	* Make sure whether harness between connector (CNS302, CNS303) on Main PCB and connector (CNS302, CNS303) on Main PCB has been connected normally.	* Replace or repair harness. * Replace or repair connector. * Replace main PCB.
It has smell or smoke when oven has been started initially.	* This is in normal state.	* It has smell or smoke with burning dirt in oven or a foreign substance when oven has been working initially. * Ventilate after getting self cleaning mode to work.
LED display is a little bit dim partially or invisible entirely.	* LED display is defective.	* Replace main PCB.
There is no buzzer beep sound when keypad is being worked.	* Check the state of buzzer on main PCB and whether PCB pattern have a short circuit or has been open.	* Replace or repair main PCB.

4-2 Electrical Malfunction

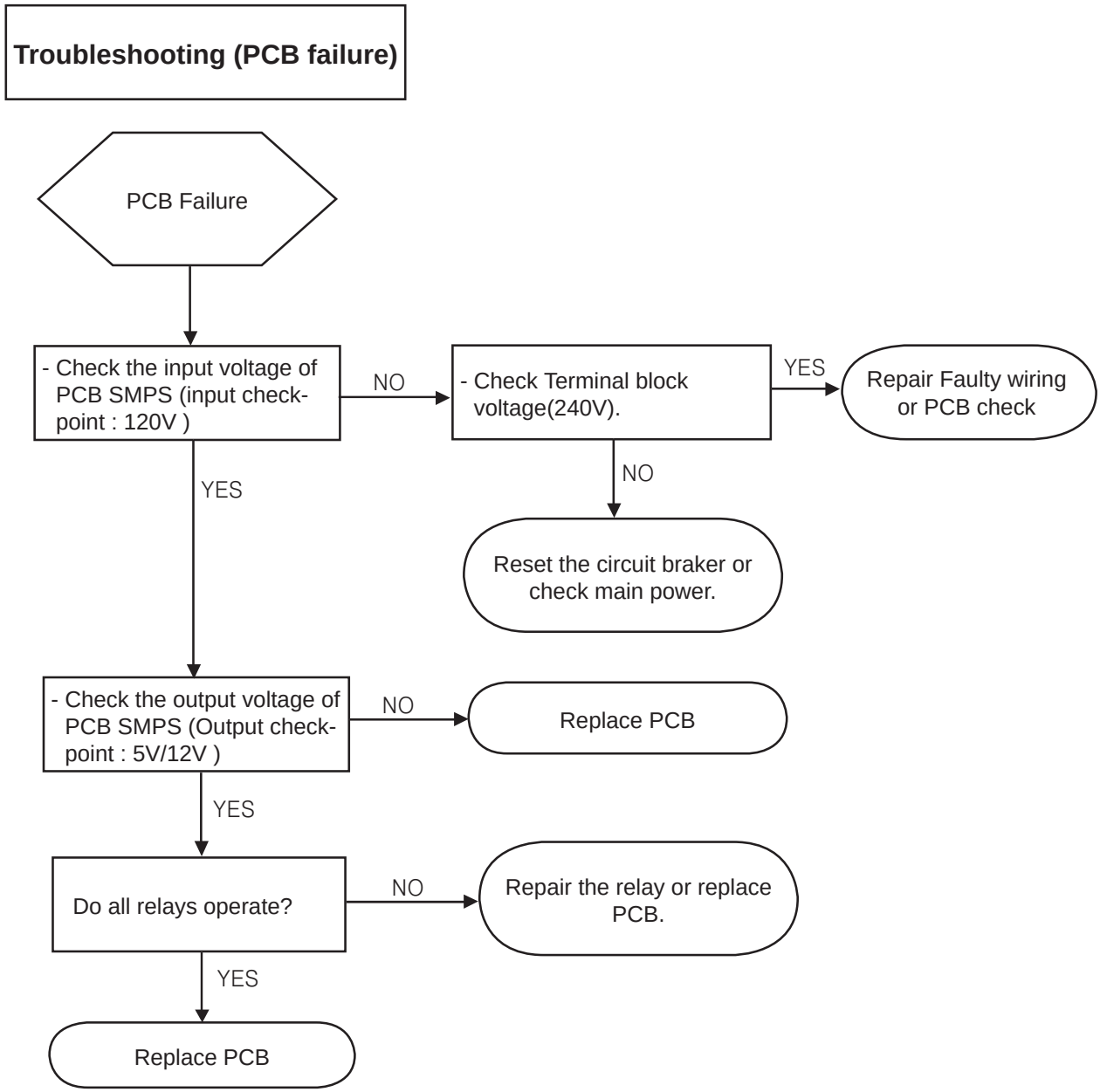
Troubleshooting (Power)



Troubleshooting (Heating)



4-2 Electrical Malfunction



4-2 Electrical Malfunction

Cooktop No heating or Abnormal working

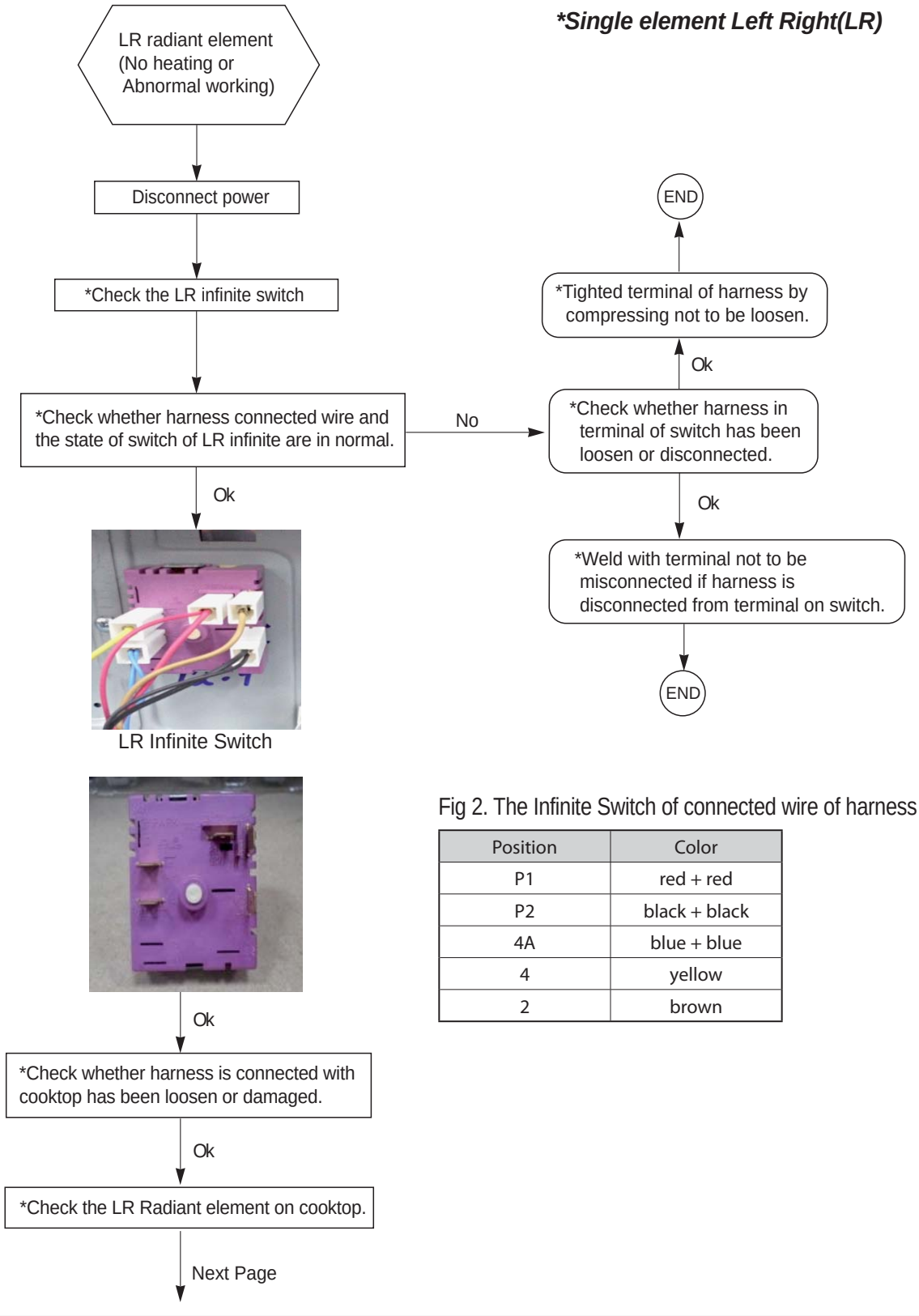

*Single element Left Right(LR)
LR radiant element
(No heating or
Abnormal working)
Disconnect power
*Check the LR infinite switch
*Check whether harness connected wire and the state of switch of LR infinite are in normal.
No
Ok
*Check whether harness in terminal of switch has been loosen or disconnected.
Ok
*Tighted terminal of harness by compressing not to be loosen.
Ok
END
*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.
END
LR Infinite Switch
Ok
*Check whether harness is connected with cooktop has been loosen or damaged.
Ok
*Check the LR Radiant element on cooktop.
Next Page

Fig 2. The Infinite Switch of connected wire of harness

Position	Color
P1	red + red
P2	black + black
4A	blue + blue
4	yellow
2	brown

4-2 Electrical Malfunction

(Continued)

LR radiant element
(No heating or
Abnormal working)

* Check the element of LR Radiant

*Check whether harness connected wire and the state of element of LR radiant are in normal.

No

*Check whether harness in terminal of radiant has been loosen or disconnected.

Ok

*Tighted terminal of harness by compressing not to be loosen.

Ok

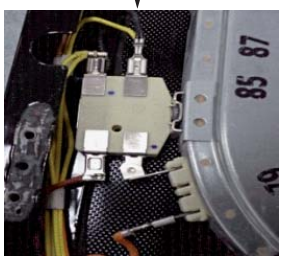
END

Ok

*Weld with terminal not to be misconnected if harness is disconnected from terminal on radiant.

END

Ok



Assembly LR Cooktop

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected

LR radiant element

Ok

*Check whether harness is connected with LR infinite switch has been damaged or disconnected.

END

Fig3. LR radiant element

Position	ohms
1b-2b	∞
2a-"A"	29~35Ω

Fig4. The radiant heater of connected wire of harness

Position	Color
"A"	orange
2a	brown
1b	yellow+black
2b	yellow+yellow

4-2 Electrical Malfunction

(Continued)

Dual element Right Front(LF)

LF radiant element (No heating or abnomal working)

* Disconnect power

* Check theLF infinite switch

*Check whether harness connected wire and the state of LF infinite switch are in normal

No

Yes

Yes

*Check whether harness is connected with cooktop has been loosen or damaged.

*Check the element of LF Radiant on cooktop.

Next Page

*Check whether harness in terminal of switch has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

Yes

END

*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.

END

Fig.5 The Infinite Switch of connected wire of harness

Position	Color
P1	red + red
P2	black + black
S1	blue
S2	black+brown
4A	brown
4	white
2	gray

4-2 Electrical Malfunction

(Continued)

LF radiant element
(No heating or
Abnormal working)

*check the element of LF Radiant

*Check whether harness connected wire and the state of LF infinite switch are in normal.

No

*Check whether harness in terminal of Radiant has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

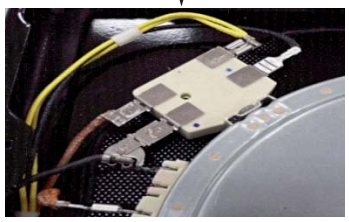
END

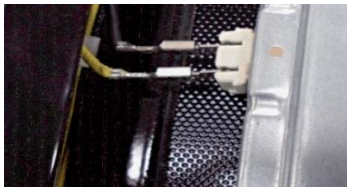
Yes

*Weld with terminal not to be misconnected if harness is disconnected from terminal on Radiant.

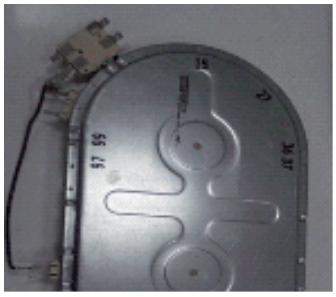
END

Ok





Single element



Bride element

Ok

*Check whether harness is connected with LF infinite switch has been damaged or disconnected.

END

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected.

Fig.6 LF radiant element

Position	ohms
1b-2b	∞
2a-"A"	29~35 Ω

Fig.7 The radiant heater of connected wire of harness

●Single element

Position	Color
"A"	orange
2a	brown
1b	black
2b	yellow+ yellow

●Bridge element

Position	Color
"A"	black
"B"	yellow

4-2 Electrical Malfunction

RR radiant element
(No heating or
abnomal working)

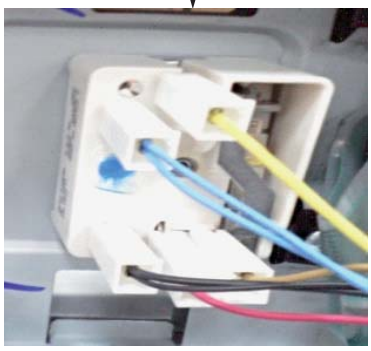
* Disconnect power

* Check the RR infinite switch

*Check whether harness connected wire and the state of switch of RR Radiant are in normal.

No

Ok



RR Infinite switch

Ok

*Check whether harness is connected with cooktop has been damaged or disconnected.

*Check the element of RR Radiant on Cooktop.

Next Page

Single element Right Rear(RR)

END

Ok

*Tighted terminal of harness by compressing not to be loosen.

Ok

*Check whether harness in terminal on switch has been loosen or disconnected.

Ok

*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.

END

Fig.8 The Infinite Switch of connected wire of harness

Position	Color
3-L1	black+black
5-L2	red
4-H2	brown
2-P	blue+blue
1-H1	yellow

4-2 Electrical Malfunction

(Continued)

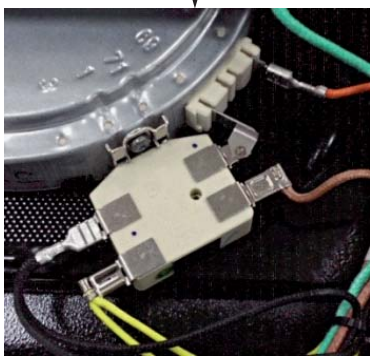
RR radiant element
(No heating or
Abnormal working)

*Check the element of RR Radiant

*Check whether harness connected wire and the state of element of RR Radiant are in normal.

No

Ok



Assembly RR Cooktop

Ok

*Check whether harness is connected with RR infinite switch has been damaged or disconnected.

*Check whether harness in terminal of Radiant has been loosen or disconnected.

Ok

*Tighted terminal of harness by compressing not to be loosen.

Ok

END

*Weld with terminal not to be misconnected if harness is disconnected from terminal on Radiant.

END

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected.

Fig.9 RR radiant element

Position	ohms
1b-2b	∞
2a-"A"	44~50Ω

Fig.10 The radiant heater of connected wire of harness

Position	Color
"A"	orange
2a	brown
1b	black + black
2b	yellow + yellow

4-2 Electrical Malfunction

(Continued)

Triple element Right Front(RF)

RF radiant element (No heating or abnomal working)

* Disconnect power

* Check theRF infinite switch

*Check whether harness connected wire and the state of RF infinite switch are in normal

No

*Check whether harness in terminal of switch has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

Yes

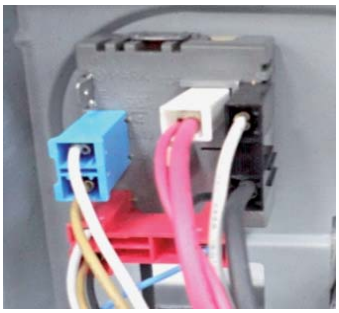
END

Yes

*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.

END

Yes



RF Infinite switch

Yes

*Check whether harness is connected with cooktop has been loosen or damaged.

*Check the element of RF Radiant on cooktop.

Next Page

Fig.5 The radiant heater of connected wire of harness

Position	Color
P1	red+red
P2	black+black
S1	black+brown
S2	blue
4A	brown
4B	gray
4	white
2	gray

4-2 Electrical Malfunction

(Continued)

RF radiant element
(No heating or
Abnormal working)

*check the element of RF Radiant

*Check whether harness connected wire and the state of RF infinite switch are in normal.

No

*Check whether harness in terminal of Radiant has been loosen or disconnected.

Yes

*Tighted terminal of harness by compressing not to be loosen.

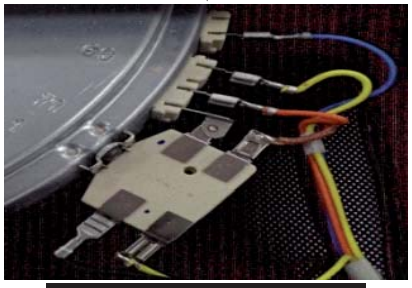
END

Yes

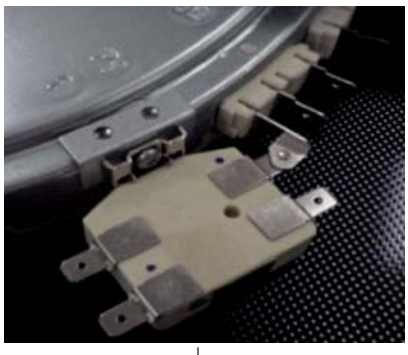
*Weld with terminal not to be misconnected if harness is disconnected from terminal on Radiant.

END

Yes



Assembly RF Cooktop



Yes

*Check whether harness is connected with RF infinite switch has been damaged or disconnected.

END

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected.

Fig.6 RF radiant element

Position	ohms
1b-2b	∞
2a-"A"	48~55 Ω
2a-"B"	48~55 Ω
2a-"C"	66~73 Ω

Fig.7 The radiant heater of connected wire of harness

Position	Color
"A"	orange
"B"	yellow
"C"	blue
2a	brown
1b	black
2b	yellow

4-2 Electrical Malfunction

(Continued)

RC radiant element
(No heating or
Abnormal working)

*Check element of RC radiant.

*Check whether harness connected wire and the state of element of RC radiant are in normal.

No

*Check whether harness in terminal of radiant has been loosen or disconnected.

Ok

*Tighten terminal of harness by compressing not to be loosen.

Ok

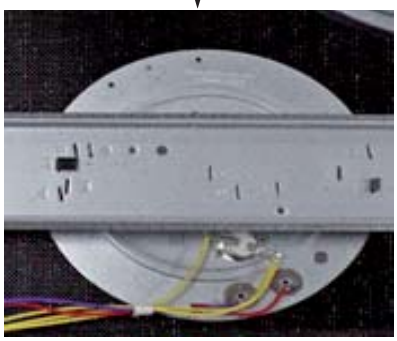
END

Ok

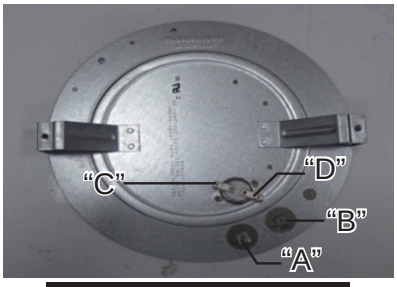
*Weld with terminal not to be misconnected if harness is disconnected from terminal on switch.

END

Ok



Assembly RC cooktop



RC radiant element

Ok

*Check whether harness is connected with warming zone relay on Main PCB has been damaged or disconnected.

Ok

END

WARNING

It is very dangerous when radiant heater is working in case that harness has misconnected.

Fig.14 RC radiant element

Position	ohms
"A"-"B"	560~600Ω
"C"-"D"	∞Ω

(at the room temperature)

Fig.15 The drawer of connected wire of harness

Position	Color
"A"	violet (red)
"B"	red (violet)
"C"	yellow
"D"	yellow

4-2 Electrical Malfunction

RC radiant element
(No heating or
Abnormal working)

* Disconnect power

*Check warming center relay on main PCB.

No

*Check whether PCB pattern have a short circuit or Relay (RY206) has been damaged.

Ok

*Replace relay or repair PCB pattern.

Ok

END

Ok

*Check whether harness in terminal(CNP212) of main PCB has been loosen or disconnected.

Ok

*Check whether harness is connected with cooktop has been damaged or disconnected.

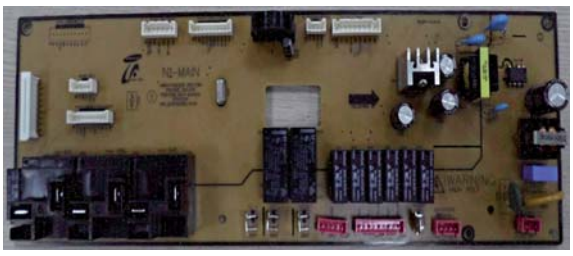
No

*Tighten terminal of harness by compressing not to be loosen.

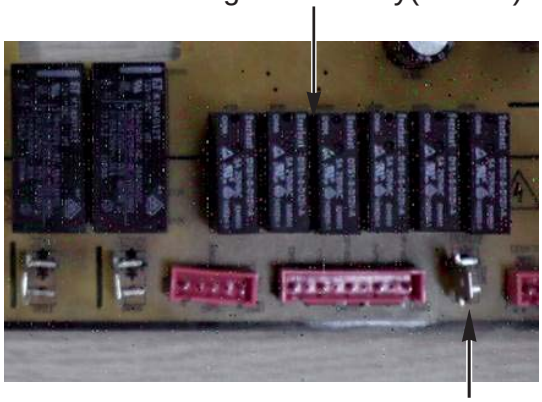
Ok

*Check RC Radiant element of cooktop.

Next page



Warming center relay(RY206)



CNP212

4-2 Electrical Malfunction

Hot indicator Lamp failure (cooktop)

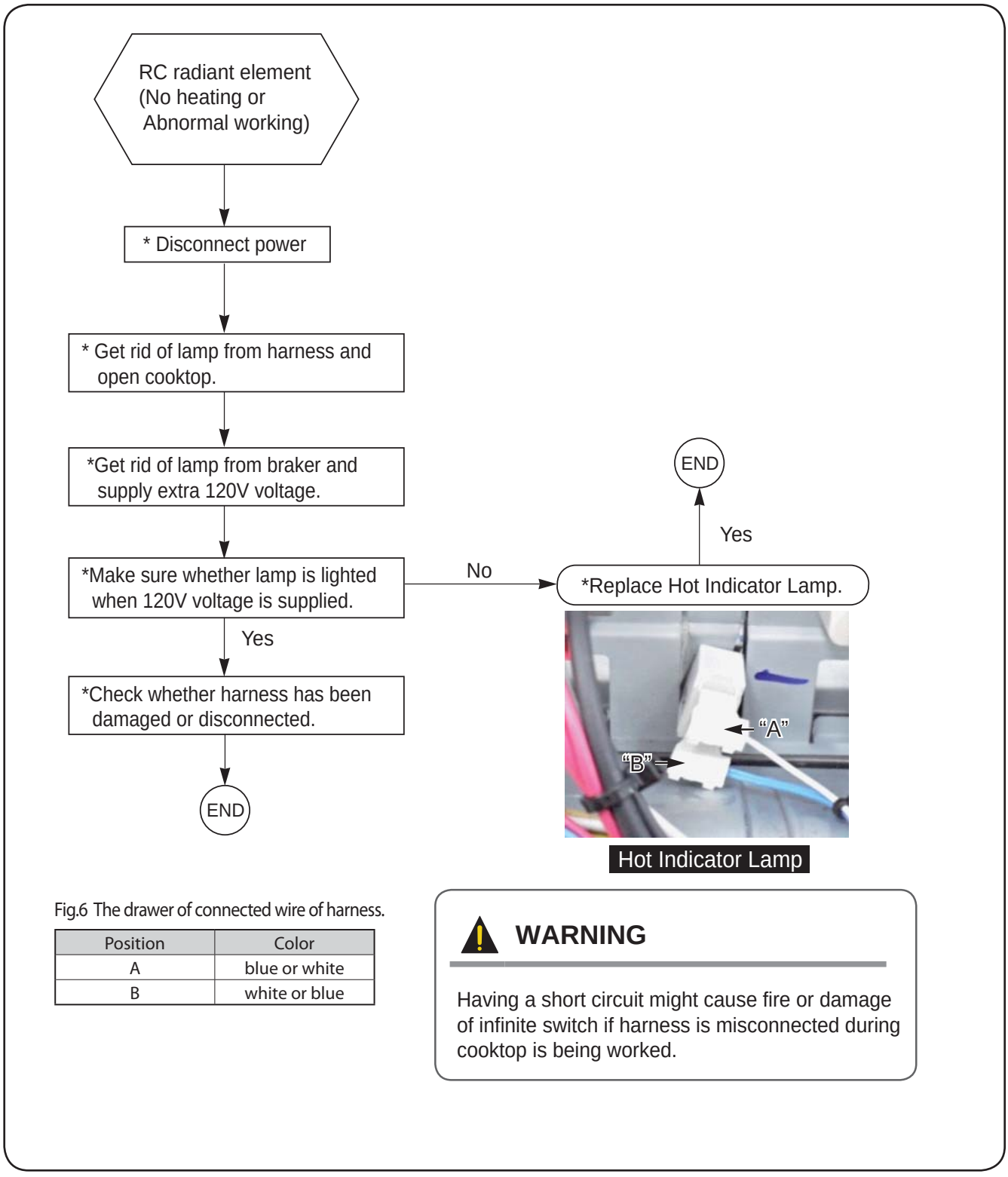


Fig.6 The drawer of connected wire of harness.

Position	Color
A	blue or white
B	white or blue

WARNING

Having a short circuit might cause fire or damage of infinite switch if harness is misconnected during cooktop is being worked.

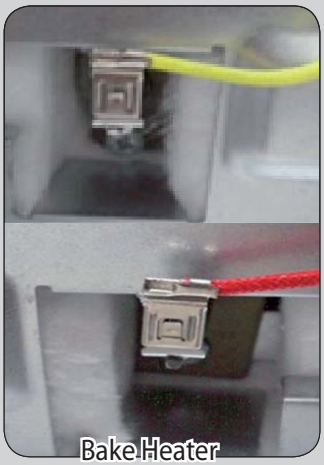
(*Warning : Having a short circuit of harness Color to be turned "Yellow+White" might cause fire or damage of infinite switch.)

4-2 Electrical Malfunction

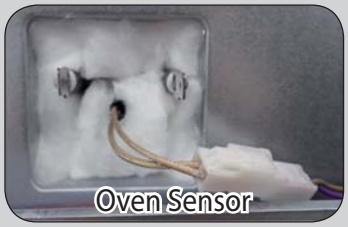
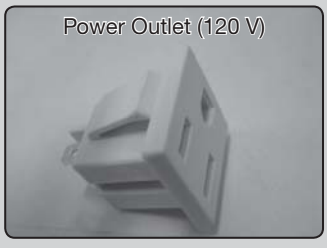
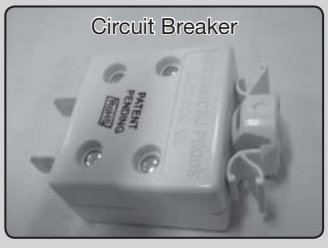
Component testing procedures

WARNING

ELECTRICAL SHOCK HAZARD
Disconnect power before servicing the range. Replace all panels before operating range. Failure to do so can result in death or electrical shock.

FIGURE	TESTS MEASURE	RESULTS
Broil Heater	* Measure resistance values of heater's terminal after taking off harness from heater. * Measure voltage of heater's terminal after making oven work by pressing broil keypad.	* Approx : 13 ~ 16Ω (at the room temperature) * Terminal voltage of Broil heater : AC 240V * Replace or repair harness
 Bake Heater	* Measure resistance values of heater's terminal after taking off harness from heater. * Measure voltage of heater's terminal after making oven work by pressing bake keypad. (Make sure that voltage has to be measured for more than 1 minute because heater is supposed to on-off cycling work.)	* Approx : 26 ~ 30Ω (at the room temperature) * Terminal voltage of bake heater : AC 240V * Replace or repair harness
Convection Heater	* Measure resistance values of heater's terminal after taking off harness from heater . * Measure voltage of heater's terminal after having oven worked, by pressing convection bake keypad. (Make sure that voltage has to be measured for more than 1 minute because heater is supposed to on-off Cycling work .)	**Approx** * Convection Fan : 70 ~ 73Ω (at the room temperature) * Terminal Voltage of Convection Fan : 240V * Replace or repair harness. * Replace or repair main PCB .
Warming Drawer	* Measure the resistance of values of heater, after taking off harness from heater. * Measure the terminal voltage of heater after making oven work by pressing warming drawer keypad.	**Approx** * 22 ~ 25Ω(at the room temperature) * Terminal voltage of Drawer heater : AC 120V * Replace or repaire harness * Replace or repaire Sub PCB
Convection Fan	* Measure resistance value of Motor terminal after taking off harness from Motor. * Measure Voltage of Motor's terminal after making oven work by pressing bake keypad. (Make sure that voltage has to be measured for more than 1 minute because Fan is supposed to on-off Cycling work.)	**Approx** * Convection Fan : 20 ~ 30Ω * Sub Fan : 85 ~ 100Ω* (Upper, Lower) * Terminal Voltage of Convection Fan and Sub Fan : 120V * Replace or repair harness

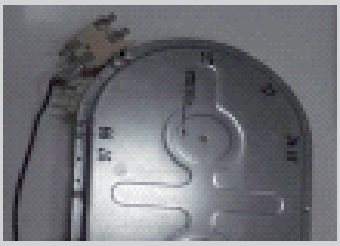
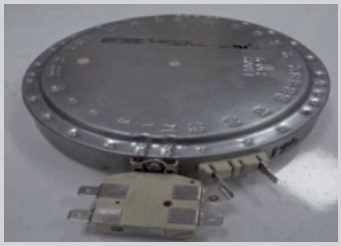
4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
Oven Lamp Socket	* First of all, make sure that lamp filament is disconnected or not. * Measure resistance socket's terminal after separating harness from heater and removing lamp. * Measure the voltage of socket's terminal after having lamp worked by pressing oven light keypad.	* Approx : ∞Ω * Terminal voltage of lamp socket : 120V * Replace or repair harness.
Door Lock	* Measure the state of micro switch and motor after taking off harness from the heater. * Check whether lock work normally by pressing cooking time button and delay start keypad at the same time for 3 seconds.	* Lock motor Resistance : 2500 ~ 2700Ω (at the room temperature) voltage : 120V * Micro switch COM-NO * Replace or repair if harness has been loosen or disconnected.
Door plunger switch	* Check the state of working of switch. * Make sure whether wire, housing and terminal is connected with switch has been damaged or not.	Nomal open : 0Ω Nomal close : ∞Ω * Replace or repair if wire or terminal has been damaged.
Hot Surface & Surface Lamp (Back Guard)	* Measure voltage which is supplied with lamp terminal. * Check whether harness has been loosen or disconnected.	**Approx.** * Lamp voltage :120V * resistance : ∞Ω * Replace or repair if wire or terminal has been damaged.
 Oven Sensor	* Check whether the resistance values of oven sensor is same with a chart's one. * Check whether wire or housing has been loosen or disconnected.	**Approx** * at the room temperature :1080Ω.
 Power Outlet (120 V)  Circuit Breaker CANADA ONLY * Check whether voltage of power outlet is off by pressing reset botton of circuit breaker. * Check whether harness or terminal has been loosen or disconnected.		**Approx** * Circuit breaker : 120 V 15 A * Voltage will be drop to zero(0) during pressing reset botton. * Power outlet : 120 V 15 A * Replace or repair if harness or terminal has been damaged.

4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
LR Infinite Switch (Single)	* Check whether harness is connected with switch properly. L1 : red + red L2 : black + black P : blue + blue H1 : yellow H2 : brown * Measure the voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making LR cooktop work.	**Approx** * Resistance between terminals when switch is off : ∞Ω * When switch is on(HI) resistance H1-L1-P : 0Ω L2-H2 : 0Ω * When switch is on(HI) voltage L2=H2 ↔ H1=L1:240V L1=P ↔ LR surface Lamp :120V * Replace or repair harness
RR Infinite Switch (Single)	* Check whether harness is connected with switch properly. L1 : black + black L2 : red P : blue + blue H1 : yellow H2 : brown * Measure voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making RR cooktop work.	
LF Infinite Switch	* Check whether harness is connected with switch properly. P1 : red + red S1 : blue P2 : black + black S2 : black + brown 4A : brown 4 : white 2 : gray * Measure voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making LF cooktop work.	**Approx** * Resistance between terminals when switch is off : ∞Ω * When switch is on(HI, Max.) P1-2-4A : 0Ω S1-S2 : 0Ω P2-4 : 0Ω * When switch is on(HI, Max.) voltage P1=2=4A ↔ P2=4 : 240V S1=S2 ↔ LF suface lamp : 120V * Replace or repair harness.
RF Infinite Switch	* Check whether harness is connected with switch properly. P1 : red + red S1 : black + brown P2 : black + black S2 : blue 4A : brown 4B : gray 4 : white 2 : gray * Measure voltage and resistance between terminals. (Please refer to schematic diagram) * Check whether power level is right with making RF cooktop work.	**Approx** * Resistance between terminals when switch is off : ∞Ω * When switch is on(HI, Max.) P1-2-4A : 0Ω S1-S2 : 0Ω P2-4 : 0Ω * When switch is on(HI, Max.) voltage S1=S2 ↔ RF surface lamp : 120V P1=2=4A ↔ P2=4 : 240V

4-2 Electrical Malfunction

FIGURE	TESTS MEASURE	RESULTS
LR Radient element	* Check whether harness is connected with terminal of element properly. A : orange 2a : brown 1b : yellow + black 2b : yellow+yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b= ∞Ω 2a- "A" : 29 ~ 35Ω (at the room temperature) * 2a - "A" : 240V * Replace or repair harness.
 Bridge element	* Check whether harness is connected with terminal of element properly. A : orange 1b : black 2a : brown 2b : yellow+yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b= ∞Ω 2a -"A": 29 ~ 35Ω (at the room temperature) 2a - "A" : 240V * Replace or repair harness.
 RR Radient element	* Check whether harness is connected with termial of element properly. A : orange 1b : black + black 2a : brown 2b : yellow + yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b = ∞Ω 2a - "A": 44 ~ 50Ω (at the room temperature) 2a - "A" : 240V * Replace or repair harness.
RF Radiant element	* Check whether harness is connected with terminal of element properly. A : orange B : yellow C : blue 1b : black 2a : brown 2b : yellow * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 1b-2b= ∞Ω 2a- "A" : 48 ~ 55Ω 2a- "B" : 48 ~ 55Ω 2a- "C" : 66 ~ 73Ω (at the room temperature) * Replace or repair harness.
RC Radiant element	* Check whether harness is connected with terminal of element properly. - element terminal : violet(red) (It will not be problem with reversing the order in insering yellow and red.) 187 type TCO : yellow, yellow (It will not be problem with reversing the order in insering black and violet) * Measure voltage and resistance between terminals.	**Approx** * Terminal resistance : 187 type TCO : ∞Ω element terminal : 560 ~ 600Ω (at t he room temperature) * Element terminal : 240V * Replace or repair harness

4-2 Electrical Malfunction

Oven sensor resistance (Temperature vs. Sensor resistance)

Ro = 1000 Ohms (0˚C), RP = 2757 Ohms, Up = 5V, a = 0.00375

degree F	degree C	ohms	degree F	degree C	ohms
0	-17.8	932.12	113	45	1170.17
14	-10	961.86	122	50	1188.93
23	-5	980.95	212	100	1374.93
32	0	1000.00	302	150	1558.01
41	5	1019.02	392	200	1738.06
50	10	1038.02	482	250	1915.39
59	15	1056.99	572	300	2089.69
68	20	1075.92	662	350	2261.07
77	25	1094.83	752	400	2429.52
86	30	1113.71	842	450	2595.05
95	35	1132.56	932	500	2757.65
104	40	1151.38	1000	538	2878.57

5-1 PCB Diagrams (Main)

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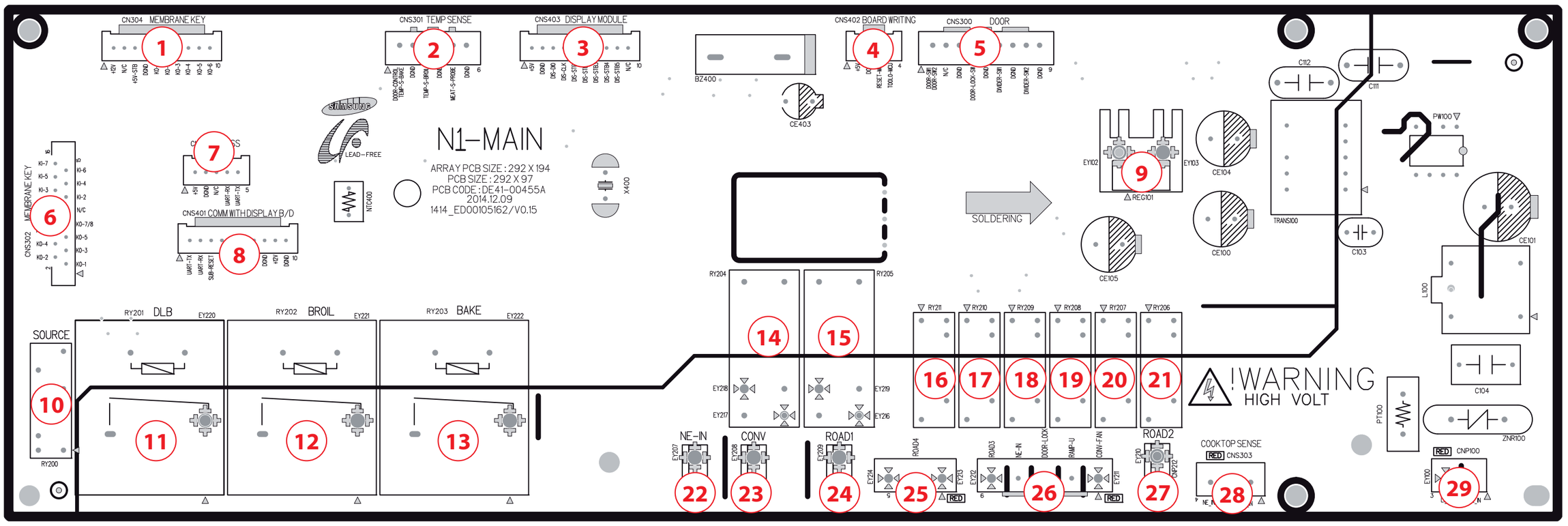

No.	Parts Number	Part Name	Function and Rule
1	CN304	Membrane key Connector	delete
2	CNS301	Temperature Sensor Connector	This is connector which is connected with temperature sensor..
3	CNS403	LED Display Connector	This is connector which is connected with LED display ass'y.
4	CNS402	On Board Writing Connector	When do microcontroller revision, connect to microcontroller writer eqipment. (No connection at normal times)
5	CNS300	Door s/w , Door Lock s/w Connector	This is connector which is connected door switch and door lock switch.
6	CNS302	Membrane key Pad Connector	This is connector which is connected with membrane key pad.
7	CNS400	HASS connector	This is connector for the program smart checking.
8	CNS401	Communication Display Board	This is connector which is connected with display board.
9	REG101	DC 5V Regulator IC	This is to supply DC5V with main PCB by voltage regulator.
10	RY200	RY-Source Control Relay	This is relay which control source of DLB, BAKE Heater, BROIL Heater, Convection Heater relay.
11	RY201	DLB Relay	Circuit is designed to have broil relay or convection relay worked after DLB relay is being worked by Double line break.
12	RY202	Broil Heater Relay	Broil relay(RY202), Bake relay(RY203) will be on-off working by micom signal after DLB relay is worked.
13	RY203	Bake Heater Relay	(Broil relay : It will not be problem with reversing the order in insering Black and Brown)(Bake relay : It will not be problem with reversing the order in insering Yellow and Gray)
14	RY204	Convection Heater Relay	This is connector which is connected with convection heater.
15	RY205	Option Relay	Unused Parts
16	RY211	Option Relay	Unused Parts
17	RY210	Option Relay	Unused Parts
18	RY209	Convection Motor Relay	Convection Motor
19	RY208	Oven Lamp Relay	Oven Lamp
20	RY207	Door Lock Motor	Door Lock Motor
21	RY206	Warming Center	Warming Center of Cooktop
22	CNP207	Power Connector(Neutral)	Neutral of Convection and warming draw Heater
23	CNP208	Convection Heater Connector	Convection Heater
24	CNP209	Option Connector	Unused Parts
25	CNP211	Option Connector	Unused Parts
26	CNP210	Relay Connector	This is connector whitch is connected with door lock motor, oven lamp, convection motor.
27	CNP212	Power Connector(Live)	Warming Center of Cooktop
28	CNS303	Cooktop sensor	This is connector which is connected with cooktop sensor.
29	CNP100	Power Connector	This is connector which supply AC 120V(L1-N).

5-2 PCB Diagrams

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CN301
TEMP
SMW200-06
⑥ GND(Pb) (Non)
⑤ Probe (Non)
④ GND (Non)
③ Lower Sensor (Non)
② GND(YL)
① U-Sensor(BL)

CNS300
Door
SMW200-09
⑨ GND(GN)
⑧ Divider SW2(Non)
⑦ GND(Non)
⑥ Divider SW1(Non)
⑤ GND(OR)
④ D/Lock SW(BR)
③ GND(VI)
②
① Door-SW1(BL)

CNS302
Membrane Key

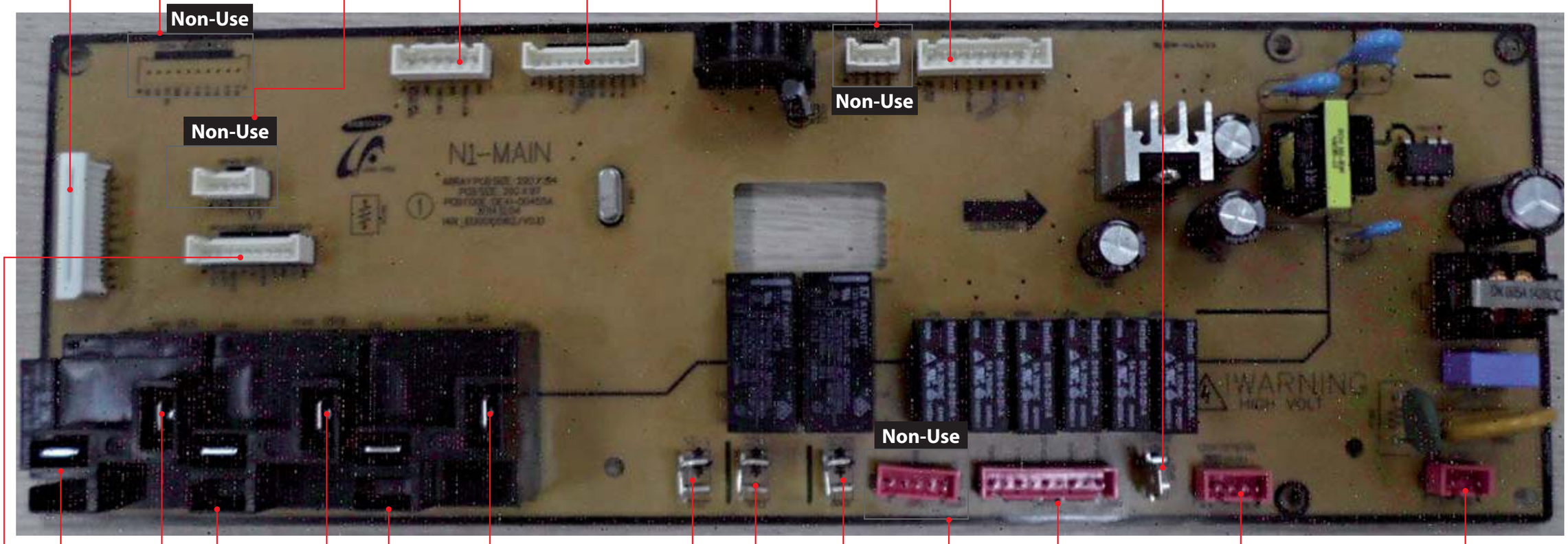
CNS403
Display Module
SMW200-10

CN304
Extend Board
SMW200-10

CNS400
HASS
SMW200-05

CNS402
Writing
SMW200-04

CNP212
W/C



L2(RD)

L1(BK)

L1(GY)

DLB (L2)

BROIL(BR)

BAKE(YL)

L1 (WH/BL)
SMW200-10
CNP207

W/D.
SMW200-10
CNP208

CONV.(BL)
SMW200-10
CNP209

CNP100
PBA Power
SMW250-03
③ L1(BK)
②
① N(WH)

CNS401
Comm, Display
SMW200-10
⑩ GND
⑨ +12V
⑧ GND
⑦ +5V
⑥ Wake-Up
⑤
④ INT
③ RESET
② UART-RX
① UART-TX

CNP211
SMW250-05
⑤
④
③ Option 2(Non)
②
①

CNP210
Small Load
SMW250-09
⑨ option 1(Non)
⑧
⑦ L1(BL)
⑥
⑤ D/L Motor(YL)
④
③ O/Lamp U(BL)
②
① C/Fan(BR)

CNS303
Cooktop HS
SMW250-04
⑤ N(WH)
④
③
②
① C-Top HS(RD)

6-1 Wiring Diagrams

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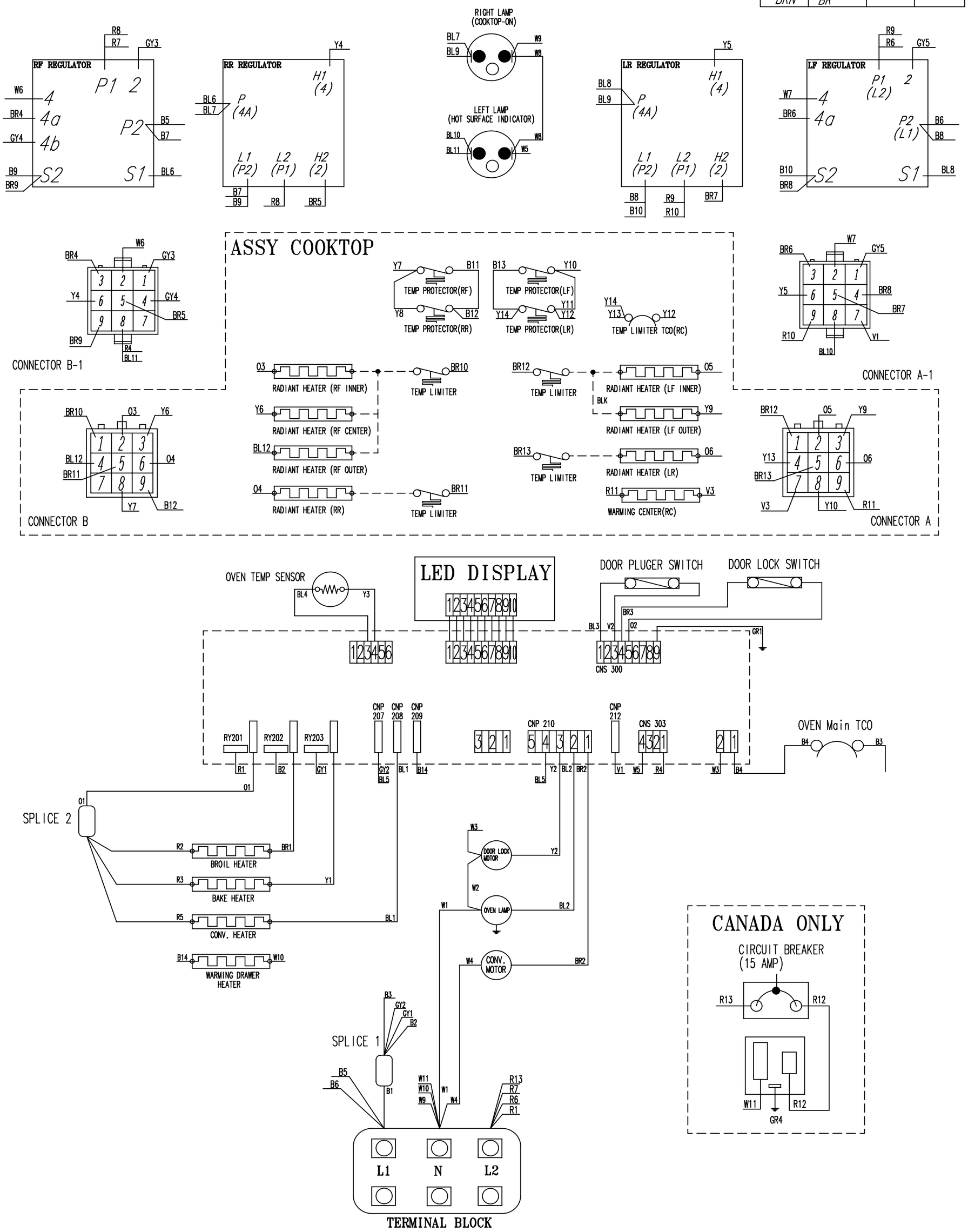
NOTE
1) INPUT POWER : AC240V 60Hz, 14000W
1-1) OVEN HEATER : MAX - 5300W
1-2) COOKTOP : MAX - 8700W
2) OVEN DOOR OPENED AND UNLOCKED

WIRING DIAGRAM

MODEL : NE59J7650**
NE59J7651**

COLOR		COLOR	
RED	R	ORANGE	O
WHITE	W	VIOLET	V
BLUE	BL	BLACK	B
YELLOW	Y	GRAY	GY
SKY	SK	GREEN	GR
BRN	BR		



COOKTOP ELEMENTS		
COMPONENTS	INPUT	WATTAGE
RF RADIANT ELEMENT	240V	3000
RR RADIANT ELEMENT	240V	1200
LF RADIANT ELEMENT	240V	2600
LR RADIANT ELEMENT	240V	1800
RC WARMER ELEMENT	240V	100

OVEN HEATING ELECMENTS		
COMPONENTS	INPUT	WATTAGE
BAKE	240V	3000W
BROIL	240V	4200W
CONVECTION	240V	800W
WARM DRAWER	120V	600W

SAMSUNG ELECTRONICS

GSPN (GLOBAL SERVICE PARTNER NETWORK)

Area	Web Site
Europe, CIS, Mideast & Africa	gspn1.samsungcsportal.com
Asia	gspn2.samsungcsportal.com
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